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# BRITISH TECHNOLOGY INDEX

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## INTRODUCTION

This Index is a subject guide to the major articles published in 400 British technical journals in 1963. It comprises about 30,000 entries arranged in a single alphabetical sequence of subject headings, together with supporting references.

### *Subject Scope*

The Index embraces all departments of Engineering and Chemical Technology, together with the various Manufacturing Processes based upon them. The distinction between Pure and Applied science is often extremely difficult to use as a basis for selecting or classifying literature, and although this *Index* is centred upon applied science it also includes a great deal of material on the pure science (i.e. the physics or chemistry) of man-made objects and industrial processes. Instruments of all kinds are covered, irrespective of whether their field of application is in pure or applied science. Articles on the chemistry of individual substances are also indexed, as it is only very rarely possible to assert that a chemical species is entirely without technical interest. The *Index* does not cover Industrial Economics, but it does contain references to articles of a mixed technical-economic character. These are invariably signalled by the subheading 'Industry' as opposed to the more usual 'Manufactures' or 'Production' for the technical processes. Technology also overlaps the field of Management at several points, and here the policy of the *Index* is to include from the management sphere only material on such physical and statistical techniques as work study, ergonomics and operational research. Finally, it should be mentioned that the *Index* omits the applied biological sciences from its purview. Here again a number of borderline subjects are included. For instance, the production technology and the chemistry of food, drugs and pesticides are covered, but the physiological chemical aspects are excluded.

### *Index Structure*

The *Index* is designed primarily as a reference tool for tracing articles on highly specific topics. For this purpose the headings are detailed and generally co-extensive with the subjects of the articles listed.

The basic method of index construction may be illustrated by the treatment of such a subject as 'Bleaching Cotton by hydrogen peroxide'. A

single entry is made with supporting references, as follows:

**COTTON, Bleaching, Hydrogen peroxide.**

**HYDROGEN PEROXIDE, Bleaching, Cotton.**

See COTTON, Bleaching, Hydrogen peroxide

**BLEACHING, Cotton.** See COTTON, Bleaching

Additional facilities are given in two situations. When the first two elements of a heading are in the relation of Whole and Part, as in SHIPS, Diesel engines or MOTOR CARS, Bodies, then a second permuted entry (DIESEL ENGINES, Ships and BODIES, Motor cars) is given under the term representing the Part. This is considered desirable because interest in a particular component may often ignore the more comprehensive unit of which it forms a part. Considerations of a similar character arise in connection with Processes and Applications. The *Index* normally enters under the Application with a reference from the Process. There is a case for substituting a second entry for the reference, but it is felt to be less strong than the case for double entry for Whole-Part and Part-Whole, and it is not possible to have double entry for both in view of economic limitations on the size of the *Index*. The second occasion for the use of double entry is the subject which is a proper name, such as the name of a teaching or research institution, or the name of a prominent structure (realised or unrealised) such as the CHANNEL TUNNEL or FORTH ROAD BRIDGE. In these cases, entries are given both under proper name and under the term for the subject illustrated (e.g. BRIDGES, Suspension and TUNNELS).

In this *Index*, the subjects are entered directly into the alphabetical sequence, and not as sub-headings of more general terms, *as long as they can stand alone with unequivocal meaning*, corresponding to the subject of the article. Thus DRY ROT is entered directly under D, and not under WOOD, Pests (though the latter is a perfectly good heading for an article on Wood pests generally. However, an article on Dry rot in plywood, would be entered as PLYWOOD, Dry rot. The purpose here is again to facilitate specific topic searching. Though the *Index* is necessarily a cumbersome tool for broad field searching it has been thought desirable to signpost some varieties of subject relationship. *Index* users often discover pertinent material under a term narrower in meaning than that which they consulted first as approach term. Inquirers primarily interested in a particular application of a process may find useful information on other applications of the same process to parallel situations.



Relational signposting in the *Index* is carried out by references of two kinds. In the first place there are "Related heading" references which refer from more to less general terms. A number of classification schemes have been pressed into service in this connection. Not all of the various hierarchical steps are everywhere included. Thus the names of the various plastics are given as references at Plastics, and not via such intermediate groupings as Synthetic Resin Plastics, and Condensation Polymerised Plastics, though occasionally articles will appear covering these relatively generalised concepts. The "related heading" network for Chemistry is of the simplest kind, pending more fundamental work on classification in this field. No attempt is made to link the various inorganic chemicals, and for organic chemicals only the intermediate concepts "Aliphatic" and "Cyclic" and "Heterocyclic" are brought into the system of references. It may be possible with more experience to clothe this skeleton. For reasons of space no references are given between subheadings under the same main heading (e.g. AIRCRAFT, Engines and AIRCRAFT, Gas turbines). To compensate for this absence brief systematic synopses have been added at the beginning of certain of the longer sequences of subheadings.

The other relation-indicating mechanism is inherent in the system of inversion references, of which an example has already been given for

COTTON, Bleaching, Hydrogen peroxide.

The person searching for this subject may also be marginally interested in (a) Hydrogen peroxide, (b) Hydrogen peroxide bleaching, (c) Bleaching of other cellulosic fibres. The routine instruction is simply to note the sub-heading terms and then look them up in the main sequence. Thus at HYDROGEN PEROXIDE will be found entries for material in this substance in general and on its use for bleaching generally: there will also be references locating headings on its particular applications and the hydrogen peroxide bleaching of particular substances. At BLEACHING will be found entries for articles on bleaching generally, and references to headlines on the bleaching of individual substances.

### *Order of Elements in Headings*

Most of the subjects indexed are composite in that they cannot usually be expressed in a single word or phrase. The question therefore arises as to which of the various verbal elements required for the heading shall be entry word and generally as to the order of the other elements in the heading.

The order of verbal elements or components is normally so devised that an account of a process applied to a particular application is placed under the term for the Application. Another invariable

rule is that the various word-elements are arranged left to right in order of decreasing concreteness with the most concrete element as the entry word. There are many situations in which recognisable differences in terms of concreteness and abstractness may not be apparent, and a number of rules have been devised for the indexers which regulate heading component order through a consideration of the relationships between the components. The following table illustrates the more commonly used heading constructions and their natural language equivalents.

### *Compounds which specify a particular type or variety of Thing or Material:*

<i>Heading and subheading</i>	<i>Natural language</i>
1. THING <sub>1</sub> , Thing <sub>2</sub> CONVEYORS, Roller	Conveyors with Rollers
2. FUNCTION, Thing PRINTING, Inks	Inks for Printing
3. THING <sub>2</sub> , Thing <sub>1</sub> BUSES, Garages	Garages for Buses
4. THING, Property FABRICS, Coated	Fabrics with Coating
5. THING <sub>2</sub> , Thing <sub>1</sub> , TURBINES, Rotors THING <sub>1</sub> , Thing <sub>2</sub> ROTORS, Turbines	Rotors of Turbines

### *Compounds denoting Actions or Properties of Things or Materials:*

6. THING, Property BEAMS, Strength	Strength of Beams
7. THING, Action upon it IRON, Corrosion	Corrosion of Iron
8. THING <sub>1</sub> , Action upon it, Thing <sub>2</sub> METALS, Forming, Magnetic pulse	Forming of Metals by Magnetic pulses
9. THING, Action upon it, Byproduct PHTHALIC ANHY- DRIDE, Production, Tail gases	Tail gases as byproduct of Production of Phthalic anhydride
10. THING, Its Action LASERS, Welding	Welding by Lasers

### *Other compounds*

11. ACTION <sub>2</sub> , Action <sub>1</sub> PACKAGING, Label- ling	Labelling for Packaging
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12. MATERIAL, Diversified role  
 PLASTICS, Building materials      *Plastics as Building materials*

N.B.—The subscript figures refer to order in English natural language using prepositions to indicate relationships. The term THING in examples 1–10 includes Materials.

These rules, taken separately or in combination, account for a high proportion of the indexing problems met. It is hoped to amplify them in due course, thus bringing under control the few exceptions which the Index at present contains.

### ***Indexing of Locality terms***

A high proportion of the articles indexed deals with objects or activities at particular places. It is of course possible to decide in a general way that the place is or is not significant, but as usual there is a great number of debatable intermediate cases. The radical solution of indexing place in all such cases is ruled out on grounds of space and economics. The practice adopted is as follows:

(1) An article surveying comprehensively the methods practised in a particular country, or a particular species of product produced in a particular country, receives a reference from the country (and from the continent in the case of Africa and South America).

(2) An article dealing with an individual factory or its products does not normally receive a reference from place. Individual structures are not usually specified and referenced by locality, except in the following instances.

*Housing*  
*Flats, Maisonnets*  
*Churches, Monasteries and similar buildings*  
*Government and municipal buildings*  
*Town planning topics*  
*Mines*  
*Pipelines*  
*Power stations (including Nuclear and Hydroelectric)*  
*Dams*  
*Coastal and Flood control works, Drainage, Water engineering*  
*Roads*  
*Buildings connected with transport.*

### ***Ambiguity in headings***

The use of relational criteria in constructing headings goes some way towards reducing ambiguity of index headings. However, the omission of the actual relational terms or phrases can still occasionally lead to uncertainty of interpretation. Often this uncertainty is of a kind that matters little for information retrieval purposes. The heading

METALS, Extrusion, Presses

can mean that the article is about the extrusion by the press or it can be about the press which extrudes. It is doubtful if ambiguity of this kind

is of great practical importance. To distinguish an action, part or property, from the use of an action part or property term to denote a particular kind, e.g. Paint, Stoving—the stoving of paint, and Paint, Stoving, i.e. Stoving paints, the *Index* uses parentheses around a type-specifying word where the distinction seems required. The parentheses have the same sorting value as the commas which they replace.

### ***Journals covered***

A list of the journals covered by this volume of the Index, together with their publishers' addresses, is to be found at the end of the book. It includes some titles no longer in existence. Society publications simply entitled *Journal of . . .*, *Proceedings of . . .*, or *Transactions of . . .* are entered in the list under the name of the society. (In Index citations these journal titles are given in the form used in the journal itself, with the abbreviations shown on page ix.)

Thanks are due to the publishers of many of these journals for supplying copies for indexing and so expediting the work.

### ***Selection of articles for the Index***

An attempt has been made to select the more substantial articles published in the journals listed, though no evaluative criteria have been employed. The following types of material are normally excluded: (1) articles comprising less than a page of text and/or diagram in the usual format and typography, (2) brief resumés of symposia and conferences, (3) accounts of exhibitions, and other articles which consist of enumerative descriptions of a variety of products, (4) regular miscellany features, (5) students' features, (6) letters, (7) notes, (8) discussions, (9) book reviews other than essay reviews and review articles.

### ***Indexing unit***

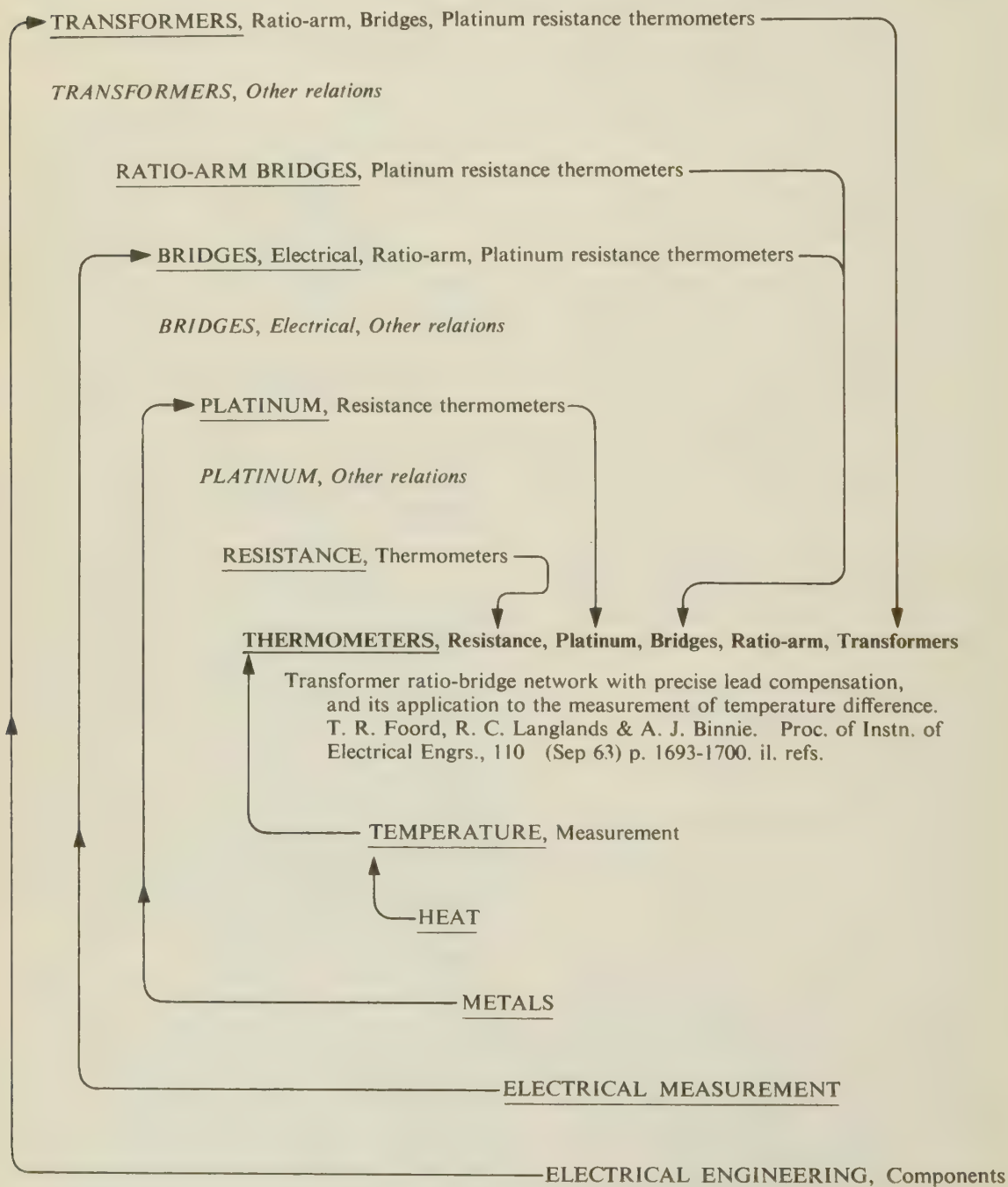
The unit of material indexed is the individual article or the part of an article which appears in a single issue of the journal. The various parts of an article published over several issues are therefore not all given the same heading where they are individually distinctive in subject matter.

### ***Synopses***

Brief systematic synopses are provided in some cases where there are long sequences of sub-headings under the same main heading. They are included because no connective references are supplied between sub-headings under the same main heading. They also afford a much simplified bird's eye view of the scope and ramifications of the material indexed under the headings concerned. The terms which are italicised in the synopses are found in their *direct* alphabetical position in the sequence of sub-headings. The terms printed in roman in the synopses are grouping terms only.

# DIAGRAM TO ILLUSTRATE INDEX STRUCTURE

Any of the underlined approach terms can be used for tracing an article on transformer ratio-arm bridges used in connection with platinum resistance thermometers. The arrowed lines represent cross references.





## List of Abbreviations used

Association	— Ass.	Journal	— J.
British	— Brit.	Page(s)	— p.
Bulletin	— Bull.	Proceedings	— Proc.
Engineer	— Engr.	Quarterly	— Q.
Engineers	— Engrs.	Royal	— R.
Engineering	— Engng.	References	— refs.
Gazette	— Gaz.	Review	— Rev.
Illustrations	— il.	Society	— Soc.
Institute	— Inst.	Transactions	— Trans.
Institution	— Instn.	Continued on later pages	— +

## MAIN SUBJECT FIELDS COVERED

### ENGINEERING

- Control, Computers  
& Instrumentation
- Mechanical
- Production
- Electrical
- Nuclear
- Structural & Building
- Hydraulic
- Sanitary
- Shipbuilding
- Highway
- Railway
- Automobile
- Aircraft
- Astronautics
- Agricultural

### MINING

### METALLURGY

### METAL MANUFACTURES

### WOOD MANUFACTURES

### TEXTILES

### CLOTHING

### PAPERMAKING

### PACKAGING

### WORKS MANAGEMENT

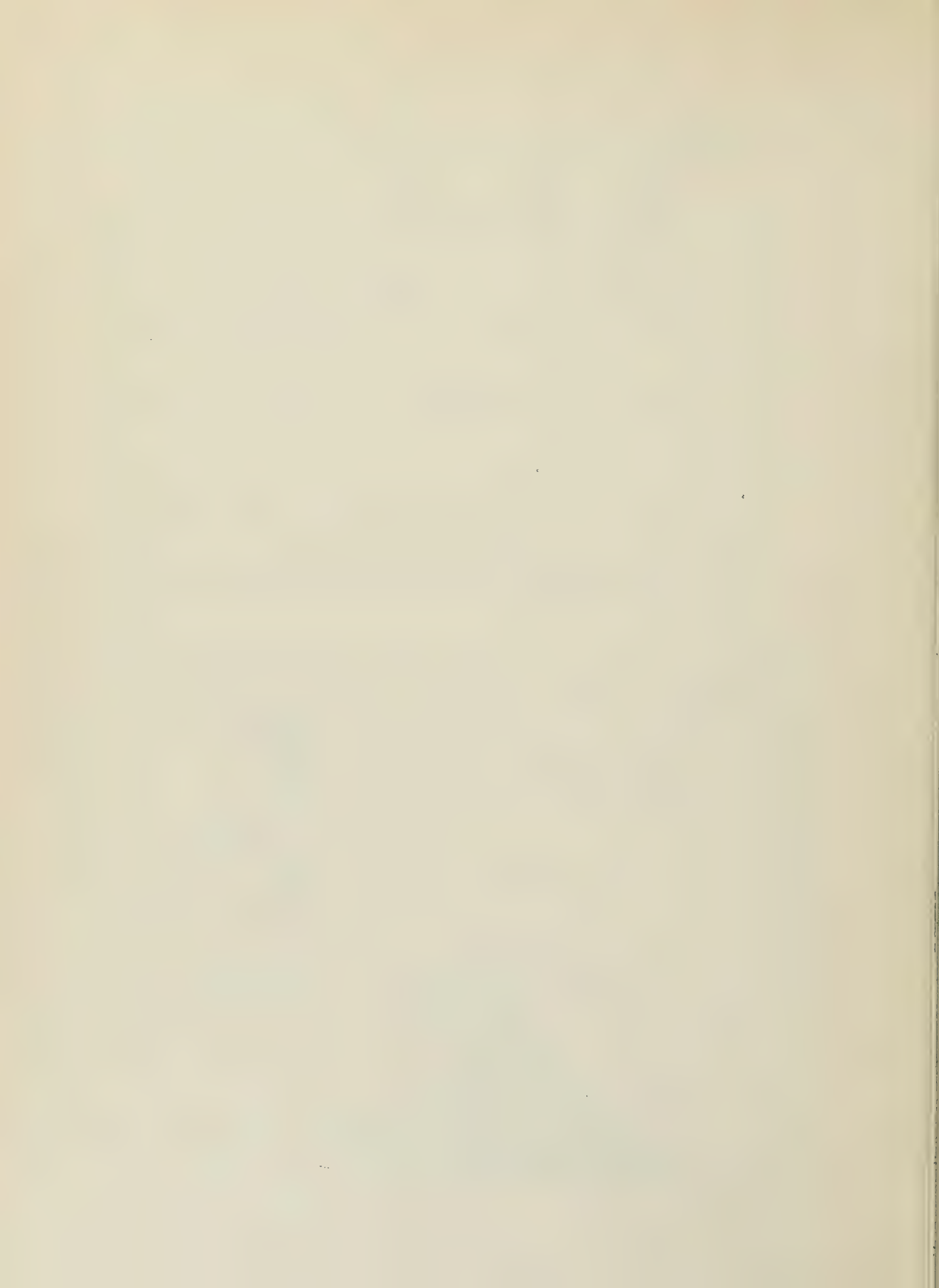
### ECONOMICS OF TECHNICAL PROCESSES

### INDUSTRIAL HEALTH & SAFETY

### TECHNICAL EDUCATION

### CHEMICAL TECHNOLOGY

- Corrosion
- Chemical engineering
- Industrial gases
- Ceramics
- Refractories
- Fuels
- Petroleum
- Plastics & Rubber
- Organic chemicals
- Dyes
- Surface active agents
- Paints
- Food and drink
- Inks
- Pharmaceutical
- Photographic chemistry



- A 75 SYSTEM, Prefabricated buildings. See BUILDINGS, Prefabricated, A 75 system
- A.B.C. TELEVISION STUDIO CENTRE, Teddington**  
ABC's new multi-standard tv centre. K. Uilyett. International TV Technical Rev., 4 (Apr 63) p.122+. il.
- A.B.S. See ACRYLONITRILE-BUTADIENE-STYRENE
- A.C., Carrier technique, Hot wire anemometers, Measurement, Turbulent flow, Fluids. See FLUIDS, Flow, Turbulent, Measurement, Anemometers, Hot wire (A.C. carrier technique)
- A.C., Circuits, Analysis, Vector diagrams**  
Vectors or phasors. J. C. S. Shaw. International J. of Electrical Engng. Education, 1 (Jun 63) p.11-14. il. refs.
- A.C., Corrosion, Lead, Batteries. See BATTERIES, Lead, Corrosion, A.C.
- A.C., Exciters, Turbo-alternators. See TURBO-ALTERNATORS, Exciters, A.C.
- A.C., Generators. See GENERATORS, Electrical, A.C.
- A.C., Impedance, Activated porous nickel electrodes. See ELECTRODES, Nickel, Porous, Activated, Impedance, A.C.
- A.C., Impedance, Platinised platinum, Electrodes. See ELECTRODES, Platinum, Platinised, Impedance, A.C.
- A.C., Impedance, Platinum electrodes. See ELECTRODES, Platinum, Impedance, A.C.
- A.C., Machines  
Related Headings:  
FREQUENCY, Changers
- A.C., Machines, Polyphase, Harmonics, Elimination, Double layer graded windings**  
Harmonic elimination in polyphase machines by graded windings. I. R. Smith & J. M. Layton. Proc. of Instn. of Electrical Engrs., 110 (Sep 63) p.1640-8. il. refs.
- A.C., Machines, Winding factor**  
Winding factors. R. Bourne. Bull. of Electrical Engng. Education (Dec 62) p.41-3. il.
- A.C., Machines, Windings**  
New three-phase winding: modified connection enables output to be increased and harmonics to be reduced. I. R. Smith. Electrical Times, 144 (12 Sep 63) p.369-72. il.
- A.C., Measurement, Comparators, Vacuo-junction tubes**  
Accurate comparator for the precision measurement of alternating voltages and currents. W. P. Crawley. Electrical Rev., 173 (25 Oct 63) p.631-4. il.
- A.C., Motors. See ELECTRIC MOTORS, A.C.
- A.C., Motors, Machine tools. See MACHINE TOOLS, Electric motors, A.C.
- A.C., Motors, Winding, Mining. See MINING, Winding, A.C. drive
- A.C., Nickel sheathed copper conductors. See CONDUCTORS, Electrical, Copper, Sheathing, Nickel, A.C. properties
- A.C., Phase relationships, Demonstration, Electric meters, Moving coil**  
Demonstrating a.c. theory: phase relationships at very low frequencies displayed on meters. T. Palmer. Wireless World, 69 (Oct 63) p.515-17. il.
- A.C., Servomechanisms. See SERVOMECHANISMS, A.C.
- A.C., Superconductivity. See SUPERCONDUCTIVITY, A.C. losses
- A.C., Tachometers. See TACHOMETERS, A.C.
- A.E.C. MANDATOR-SCAMMELL ARTICULATED VEHICLES.  
See MOTOR VEHICLES, Articulated, Types, A.E.C. Mandator-Scammell
- A.J.S. HURRICANE MOTOR CYCLES. See MOTOR CYCLES, Types, A.J.S. Hurricane
- A.J.S. MOTOR CYCLES. See MOTOR CYCLES, Types, A.J.S.
- A.J.S. 7R MOTOR CYCLES. See MOTOR CYCLES, Types, A.J.S. 7R
- A 75 SYSTEM, Prefabricated buildings. See BUILDINGS, Prefabricated, A 75 system
- ABATTOIRS. See SLAUGHTERHOUSES
- ABERDEEN  
See  
BUSES, Stations, Aberdeen  
COASTAL WORKS, Aberdeen  
FISHING, Ports, Aberdeen  
FOOD DEVELOPMENT UNIT (Unilever) Aberdeen
- ABERTHAW  
See  
COASTAL WORKS, Abertthaw  
POWER STATIONS, Abertthaw
- ABINGTON  
See  
BRITISH WELDING RESEARCH ASSOCIATION
- ABRAHAM, H.**  
Asphalts and allied substances, vols. 1 & 3: reviewed. K. H. Harrison. Chemistry & Industry (12 Jan 63) p.62-5. il. refs.
- ABRASION, Antimony. See ANTIMONY, Abrasion
- ABRASION, Bismuth. See BISMUTH, Abrasion
- ABRASION, Filament polyethylene terephthalate yarns. See YARNS, Polyethylene terephthalate, Filament, Abrasion
- ABRASION, Filament polypropylene yarns. See YARNS, Polypropylene, Filament, Abrasion
- ABRASION, Lubricant impurities. See LUBRICANTS, Impurities, Abrasion
- ABRASION, Rubber. See RUBBER, Abrasion
- ABRASION, Salt crystals. See SALT, Crystals, Abrasion
- ABRASIVE BELTS, Polishing, Steel, Sheets. See SHEETS, Steel, Polishing, Belts, Abrasive
- ABRASIVES  
Related Headings:  
CORUNDUM
- ABRASIVES, Coated**  
Manufacture and types of backed abrasives. L. J. Slack. Industrial Finishing, 15 (Jan 63) p.45-6
- ABRASIVES, Shot-blasting. See SHOT-BLASTING, Abrasives
- ABSORPTION  
Related Headings:  
CHEMISORPTION
- ABSORPTION, Acetone vapour. See ACETONE, Vapour, Absorption



- ABSORPTION, Ammonia. See AMMONIA, Absorption
- ABSORPTION, Analysis, Glucose. See GLUCOSE, Analysis (Absorption)
- ABSORPTION, Carbon dioxide. See CARBON DIOXIDE, Absorption
- ABSORPTION, Ethylene. See ETHYLENE, Absorption
- ABSORPTION, Gases. See GASES, Absorption
- ABSORPTION, Rate, Effect of chemical reactions, 2nd order**  
Approximate expressions for predicting the effect of fast second-order chemical reactions in interphase mass-transfer rates. E. N. Lightfoot. *Chemical Engng. Science*, 17 (Dec 62) p.1007-11. refs.
- ABSORPTION, Sound, Sea water. See SEA, Water, Sound, Absorption
- ABSORPTION, Water, Paint. See PAINT, Water absorption
- ABSORPTION REFRIGERATORS. See REFRIGERATORS (Absorption)
- ABSORPTION SPECTROSCOPY, Artificial emeralds. See EMERALDS, Artificial, Spectroscopy, Absorption
- ABSORPTION SPECTROSCOPY, Gems. See GEMS, Spectroscopy, Absorption
- ABSORPTION SPECTROSCOPY, Hydroxyl groups, Explosions, Gases. See GASES, Explosions, Hydroxyl groups, Spectroscopy, Absorption
- ABSTRACTA SYSTEM, Prefabricated buildings. See BUILDINGS, Prefabricated, Abstracta system
- ABU DHABI  
See  
PETROLEUM, Drilling, Off-shore, Umm Shaif  
PETROLEUM, Production, Murban  
TOWN PLANNING, Abu Dhabi
- ABU SIMBEL TEMPLES, Preservation**  
Abu Simbel temples. Builder, 204 (12 Apr 63) p.743-5. il.  
British team plan to save Egyptian temples. *Contractors Record* (4 Apr 63) p.iv. il.  
Last minute scheme for saving Abu Simbel. *New Scientist*, 17 (28 Mar 63) p.676. il.  
Modern engineering to save ancient monuments. *Muck Shifter & Bulk Handler*, 21 (Jan 63) p.19+. il.  
New scheme to save Abu Simbel temples. E. Happold. *Architects' J.*, 137 (20 Mar 63) p.610-12. il.
- ABUNDANCE-RATIO, Casades, Chemical exchange, Isotopes separation. See ISOTOPES, Separation, Chemical exchange cascade, Abundance-ratio
- ABURA**  
World timbers, no.36—Abura. *Wood*, 28 (Aug 63) suppt. il.
- ABUTMENTS, Bridges. See BRIDGES, Abutments
- ACCELERATION, Coriolis component, Measurement, Equipment**  
Apparatus for the direct measurement of the Coriolis component of acceleration. D. J. Picken. *Bull. of Mechanical Engng. Education*, 2 (Dec 63) p.177-80. il.
- ACCELERATION, Effect on burn out, Boiling. See BOILING, Burn out, Effect of acceleration**
- ACCELERATION, Missiles. See MISSILES, Acceleration**
- ACCELERATION, Motor vehicles. See MOTOR VEHICLES, Acceleration**
- ACCELERATOR HOODS, Cylinders, Drying, Papermaking. See PAPERMAKING, Drying, Cylinders, Hoods, Accelerator**
- ACCELERATORS, Developers, Photography. See PHOTOGRAPHY, Developers, Accelerators**
- ACCELERATORS, Electron**  
High energy accelerators for nuclear physics research. J. B. Adams. *Electrical Rev.*, 172 (26 Apr 63) p.681-2. il.  
High-energy accelerators for nuclear-physics research. J. B. Adams. *J. of Instn. of Electrical Engrs.*, 9 (Jun 63) p.251-2. il.
- ACCELERATORS, Electron**  
Related Headings:  
BETATRONS
- ACCELERATORS, Electron, Linear**  
775 tons of copper for linear accelerator. *Copper* (Spring 63) p.16. il.
- ACCELERATORS, Electron, Linear, Medical equipment**  
Linear accelerator for clinical use. *A.E.I. Engng.*, 3 (Sep/Oct 63) p.276-7. il.
- ACCELERATORS, Electron, Linear, Pulse shortening, Waveguides, EH<sub>11</sub> modes**  
Angular-dependent modes in circular corrugated waveguide. G. Saxon, T. R. Jarvis & I. White. *Proc. of Instn. of Electrical Engrs.*, 110 (Aug 63) p.1365-73. il. refs.
- ACCELERATORS, Motor cars. See MOTOR CARS, Accelerators**
- ACCELERATORS, Neutron beam production. See NEUTRONS, Beams, Production, Accelerators**
- ACCELERATORS, Proton**  
Giant machines probe the secrets of the atom. R. Hamilton. *Electronics Weekly* (22 May 63) p.30-1. il.  
High energy accelerators for nuclear physics research. J. B. Adams. *Electrical Rev.*, 172 (26 Apr 63) p.681-2. il.  
High-energy accelerators for nuclear-physics research. J. B. Adams. *J. of Instn. of Electrical Engrs.*, 9 (Jun 63) p.251-2. il.  
Work of the Rutherford Laboratory. T. G. Pickavance. *Brit. J. of Applied Physics*, 14 (Oct 63) p.643-50. il.
- ACCELERATORS, Proton**  
Related Headings:  
CYCLOTRONS  
SYNCHROTRONS, Proton
- ACCELERATORS, Van de Graaff, Tandem**  
Tooling-up for nuclear research. *Brit. Communications & Electronics*, 10 (Mar 63) p.218
- ACCELERATORS, Vulcanisation, Rubber. See RUBBER, Vulcanisation, Accelerators**
- ACCELEROMETERS**  
'Threshold' accelerometer [Barrett Laboratories] Packaging, 34 (Sep 63) p.80. il.
- ACCELEROMETERS, Collision deceleration recording, Motor vehicles. See MOTOR VEHICLES, Deceleration (Collisions) Recording, Accelerometers**
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- ACCELEROMETERS, Piezoelectric, Calibration**  
"Initiative" exercise in applied mechanics. B. J. Fielding. *Bull. of Mechanical Engng. Education*, 2 (Dec 63) p.171-5. il. refs.
- ACCELEROMETERS, Piezoelectric, Control systems, Exciters, Vibrations testing. See VIBRATIONS, Testing, Exciters, Control systems, Accelerometers, Piezoelectric**
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- ACCIDENTS, Coal mining. See COAL, Mining, Accidents**
- ACCIDENTS, Electric power systems. See ELECTRIC POWER SYSTEMS, Accidents**
- ACCIDENTS, Falls of ground, Coal mining. See COAL, Mining, Falls of ground, Accidents**
- ACCIDENTS, Industrial**  
Work injury toll greater than road and home. N. T. Freeman. *Industrial Safety*, 9 (Aug 63) p.455-6
- ACCIDENTS, Industrial, Costs**  
Cost of industrial accidents. A. A. Beckingsale. *Brit. J. of Industrial Safety*, 6 (Summer 63) p.34+. refs.  
Cost of industrial accidents (extract) A. A. Beckingsale. *Industrial Safety*, 9 (Jun 63) p.347+. refs.  
Cost of industrial accidents (extract) A. A. Beckingsale. *Industrial Safety*, 9 (Jul 63) p.401+. il.  
Cost of industrial accidents (extracts) A. A. Beckingsale. *Industrial Safety*, 9 (Aug 63) p.460-2. il. refs.  
Counting the cost of accidents in £.S.D. T. Robertson. *Industrial Safety*, 9 (Feb 63) p.75-7. il.
- ACCIDENTS, Iron mining. See IRON, Mining, Accidents**

**ACCIDENTS, Loading, Commercial vehicles.** See **VEHICLES, Commercial, Loading, Accidents**

**ACCIDENTS, Motorways.** See **MOTORWAYS, Accidents**

**ACCIDENTS, Plastics manufactures.** See **PLASTICS, Manufactures, Accidents**

**ACCIDENTS, Quarrying.** See **QUARRYING, Accidents**

**ACCIDENTS, Railways.** See **RAILWAYS, Accidents**

**ACCIDENTS, Rubber manufactures.** See **RUBBER, Manufactures, Accidents**

**ACCIDENTS, Transport, Coal mining.** See **COAL, Mining, Transport, Accidents**

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**ACID DYES, Dyeing, Polyamide fibres.** See **POLYAMIDES, Fibres, Dyeing, Acid dyes**

**ACID DYES, Printing, Nylon fabrics.** See **FABRICS, Nylon, Printing, Acid dyes**

**ACID DYES, Staining, Biological materials.** See **BIOLOGICAL MATERIALS, Staining, Dyes, Acid**

**ACID DYES, Wool.** See **WOOL, Dyes, Acid**

#### **ACIDS**

Related Headings:

ACETIC ACID

ACRYLIC ACID

ADIPIC ACID

AMINO ACIDS

ASCORBIC ACID

BENZOIC ACIDS

BORIC ACID

CARBOXYLIC ACIDS

$\omega$ -DICARBOXYLIC ACIDS

1,2-DIPHENYLCYCLOPROPANE SULPHINIC ACID

E.D.T.A.

FORMIC ACID

GLUCONIC ACID

GLYCOLIC ACID

HUMIC ACIDS

HYDRIODIC ACID

HYDROCHLORIC ACID

HYDROFLUORIC ACID

HYPOCHLOROUS ACID

LACTIC ACID

MONOETHENOIC ACIDS

NITRIC ACID

OXALIC ACID

PERCHLORIC ACID



**ACIDS**

Related Headings—cont.

PHOSPHORIC ACID  
PHYTIC ACID  
POLYCARBOXYLIC ACIDS  
PROPIONIC ACID  
SULPHAMIC ACID  
SULPHURIC ACID  
TRICHLOROACETIC ACID

ACIDS, Fatty. See FATTY ACIDS

ACIDS, Fatty, Baobab seed oil. See BAOBAB, Seed, Oil, Fatty acids

ACIDS, Fatty, Determination in oils, Paint vehicles. See PAINT, Vehicles, Oils, Determination of fatty acids

ACIDS, Fatty, Lima beans. See LIMA BEANS, Fatty acids

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ACOUSTIC TILES, Ceilings. See CEILINGS, Tiles, Acoustic

ACOUSTICS. See SOUND

ACOUSTICS, Buildings. See BUILDINGS, Acoustics

ACOUSTICS, Concert halls. See CONCERT HALLS, Acoustics

ACOUSTICS, Lead-Tin pipes, Organs. See ORGANS, Pipes, Lead-Tin, Acoustics

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COURTELLE  
ORLON  
VEREL  
ZEFRAFAN

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ACRYLIC FIBRES, Knitting yarns. See KNITTING, Yarns, Acrylic fibres

**ACRYLIC FIBRES-NYLON**

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ACTIVATED ANTHRACITE. See ANTHRACITE, Activated

ACTIVATED CALCIUM CARBONATES, Fillers, Rubber.

See RUBBER, Fillers, Activated calcium carbonates

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ACTIVE NETWORKS. See NETWORKS, Electrical, Active



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**ADHESION**, Paint. See **PAINT**, Adhesion

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**ADHESIVES**, Wood manufactures. See **WOOD**, Manufactures, Adhesives

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ADSORBENTS, Air conditioning, Food processing. See **FOOD**, Processing, Air conditioning, Adsorbents

**ADSORPTION**

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ADSORPTION, Carbon disulphide. See **CARBON DISULPHIDE**, Adsorption

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ADSORPTION, Gases, Surface area measurement, Sintered uranium dioxide, Fuels, Nuclear reactors. See **NUCLEAR REACTORS**, Fuels, Uranium dioxide, Sintered, Surface area measurement, Gas adsorption

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ADSORPTION, Krypton, Area determination, Vacuum deposited metal films. See **FILMS**, Metal, Vacuum deposited, Area determination, Krypton, Adsorption

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AERATION, Forced, Windrows, Compost production. See **COMPOST**, Production, Windrows, Aeration, Forced

AERATION, Retting, Flax straw. See **FLAX**, Straw, Retting, Aeration

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- AIR TRANSPORT, Sudan
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- GOLD, Deposits, Witwatersrand
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AIR CONDITIONING, Glass manufactures. See GLASS, Manufactures, Air conditioning

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AIR CONDITIONING, Motels. See MOTELS, Air conditioning

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**AIR COOLED DIESEL ENGINES.** See DIESEL ENGINES, Air-cooled

**AIR COOLED DIESEL ENGINES, Fishing vessels.** See FISHING, Vessels, Diesel engines, Air cooled

**AIR COOLED DIESEL ENGINES, Locomotives.** See LOCOMOTIVES, Diesel, Engines, Air-cooled

**AIR COOLED DIESEL ENGINES, Motor vehicles.** See MOTOR VEHICLES, Diesel engines, Air cooled

**AIR COOLED ENGINES, Motor cars.** See MOTOR CARS, Engines, Air-cooled

**AIR COOLING, Cigarette manufactures.** See CIGARETTES, Manufactures, Cooling, Air

**AIR COOLING, Diesel engines, Ships.** See SHIPS, Diesel engines, Cooling, Air

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**AIR FERRIES, Motor cars.** See MOTOR CARS, Ferries, Air

**AIR FILTERS, Diesel electric locomotives.** See LOCOMOTIVES, Diesel-electric, Air filters

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**AIR INFLATED TEMPORARY BUILDINGS.** See BUILDINGS, Temporary, Air inflated

**AIR JETS, Cooling, Nozzles, Guide vanes, Gas turbines.** See GAS TURBINES, Guide vanes, Nozzles, Cooling, Air jets

**AIR LIFT DRILLING, Boreholes, Prospecting, Coal.** See COAL, Prospecting, Boreholes, Drilling, Air lift

**AIR LIFT PUMPS.** See PUMPS, Air lift

**AIR LOSSES, Turbofans.** See TURBOFANS, Bypass air losses

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**AIR TRANSPORT**

Related Headings:

AIRPORTS

BRITISH OVERSEAS AIRWAYS CORPORATION

**AIR TRANSPORT—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## Particular countries

Great Britain

Europe

West Germany

West Berlin

Czechoslovakia

Russia

U.S.A.

Brazil

Argentina

Australia

Africa

Sudan

## Equipment &amp; Facilities

Electronic equipment

Computers

Telegraphy

Terminal buildings

## Operations

Traffic control

Timekeeping

Seat reservation

## Types of transport operations

Short haul operations

Military

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AERODROMES  
AERODYNAMICS  
AEROFOILS  
AIRSHIPS  
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## AIRCRAFT—SUBHEADINGS—Synopsis

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PETROLEUM, Production, Algeria

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CALCIUM ALGINATE

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ACETONE

ACETYLENE

ALCOHOLS, Aliphatic

ALKANES

ALLYL BROMIDES

ALLYLAMMONIUM SALTS

ALUMINIUM ALKYL

AMYL ALCOHOLS

AZOMETHINE COMPOUNDS

BUTANE

BUTYL ACRYLATE

BUTYL ALCOHOL

CHLOROFORM

1, 2-DIBROMOTETRACHLOROETHANE

DIENES

DIETHYL ETHER

DIMETHYLSODIUM

ETHANE

ETHOXYACETYLENE

ETHYL ACETATE

ETHYL ALCOHOL

ETHYL BROMIDE

ETHYL LINOLEATE

ETHYLENE

FATTY ACIDS

FATTY ESTERS

FORMALDEHYDE

GLUCONIC ACID

GLYCEROL

GLYCOLIC ACID

HALOTHANE

HEXANE

LACTIC ACID

MERCAPTANS

METHANE

METHYL ALCOHOL

METHYL BROMIDE

METHYL GROUPS

METHYL METHACRYLATE

METHYLAMINE

NITROMETHANE

OXALIC ACID

PARAFFINS

PENTANE

PROPANE

PROPIONIC ACID

SODIUM ALKYL SULPHATES



## ALIPHATIC COMPOUNDS

Related Headings—cont.

THIOUREA  
TRI-*n*-BUTYLAMINE  
TRIBUTYL PHOSPHATE  
TRICHLORACETIC ACID  
TRICHLORETHYLENE  
TRIMETHYLENE SULPHITE  
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CAUSTIC SODA

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ALLOYS, Eutectic, Copper-Aluminium. See ALUMINIUM-Copper, Eutectic alloys

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**ALUMINA**

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Products  
Castings

Fields of application  
Building materials  
Packaging materials

Alloys

**ALUMINIUM, Alloys**

Related Headings:  
DURALUMIN  
DURALUMINIUM

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ALUMINIUM, Alloys, Bodies, Vans. See VANS, Bodies, Aluminium alloys

**ALUMINIUM, Alloys, Coated, Metal, Painting**

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ALUMINIUM, Alloys, Cranes. See CRANES, Aluminium, Alloy

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**ALUMINIUM, Alloys, Fatigue strength, Effect of proof stress**

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**ALUMINIUM-SUBHEADINGS—Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

**Standards****Physico-chemical aspects**

Ions  
Corrosion

**Technical processes**

Production  
Manufactures  
Melting  
Forming  
Cold working  
Rolling  
Die casting  
Extrusion  
Machining  
Welding  
Finishing  
Coating  
Electroplating  
Anodising

**Storage****Kinds of aluminium**

Zone refined  
Reinforced

**ALUMINIUM, Alloys, Fatigue stressed, Hydrogen evolution**

Surface reactions during metal fatigue. Corrosion Technology, 10 (Jan 63) p.16-17. il. refs.

**ALUMINIUM, Alloys, Flame photometry**

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**ALUMINIUM, Alloys, Ingots. See INGOTS, Aluminium alloys****ALUMINIUM, Alloys, Intermetallic compounds**

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**ALUMINIUM, Alloys, Intermetallic compounds, Strength**

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**ALUMINIUM, Alloys, Melting, Furnaces, Gas-fired**

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**ALUMINIUM, Alloys, Molten, Transport, Articulated motor vehicles**

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**ALUMINIUM, Alloys, Motor vehicle bodies. See MOTOR VEHICLES, Bodies, Aluminium alloys****ALUMINIUM, Alloys, Plates. See PLATES, Aluminium alloy****ALUMINIUM, Alloys, Plates, Aircraft structures. See****ALUMINIUM, Alloys, Plates, Gearboxes, Computers, Aircraft. : See AIRCRAFT, Computers, Gearboxes, Plates, Aluminium alloys****ALUMINIUM, Alloys, Rods. See RODS, Aluminium alloys****ALUMINIUM, Alloys (Shipbuilding materials) Welded, Arc, Corrosion**

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**ALUMINIUM, Alloys, Strips, Tubes. See TUBES, Strips, Aluminium alloys****ALUMINIUM, Alloys, Tanks, Road tankers. See TANKERS, Road, Tanks, Aluminium alloys****ALUMINIUM, Alloys, Testing, Ultrasonics**

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**ALUMINIUM, Alloys, Tubes, Aerials, Radar. See RADAR, Aerials, Tubes, Aluminium Alloys****ALUMINIUM, Alloys, Water cooled nuclear reactors. See NUCLEAR REACTORS, Water cooled, Aluminium alloys****ALUMINIUM, Alloys, Wheels, Petroleum, Road tankers. See TANKERS, Road, Petroleum, Wheels, Aluminium alloys****ALUMINIUM, Anodes, Cathodic protection. See CATHODIC PROTECTION, Anodes, Aluminium****ALUMINIUM, Anodising**

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**ALUMINIUM, Awnings. See AWNINGS, Aluminium****ALUMINIUM, Blocks, Engines, Motor cars. See MOTOR CARS, Engines, Blocks, Aluminium****ALUMINIUM, Boats. See BOATS, Aluminium****ALUMINIUM, Bodies, Commercial vehicles. See VEHICLES, Commercial, Bodies, Aluminium****ALUMINIUM, Bodies, Motor vehicles. See MOTOR VEHICLES, Bodies, Aluminium****ALUMINIUM, Bodies, Road tankers, Transport, Oil, Transformers. See TRANSFORMERS, Oil, Transport, Road tankers, Bodies, Aluminium**

ALUMINIUM, Bridges, Pipelines. See PIPELINES, Bridges, Aluminium

ALUMINIUM, Bridges, Pipelines, Town gas. See GAS (Town) Pipelines, Bridges, Aluminium

#### ALUMINIUM, Building materials

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#### ALUMINIUM, Building materials

Related Headings:

BUILDINGS, Tall, Components, Aluminium

OFFICE BUILDINGS, Components, Aluminium

#### ALUMINIUM, Building materials, Anodising

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#### ALUMINIUM, Building materials, Anodising, Colour, Integral

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ALUMINIUM, Bumpers, Motor cars. See MOTOR CARS, Bumpers, Aluminium

ALUMINIUM, Cables. See CABLES, Electric, Aluminium

ALUMINIUM, Cables, Electrical installations, Factories.

See FACTORIES, Electrical installations, Cables, Aluminium

ALUMINIUM, Cables, Electrical installations, Steel production. See STEEL, Production, Electrical installations, Cables, Aluminium

ALUMINIUM, Camping equipment. See CAMPING EQUIPMENT, Aluminium

ALUMINIUM, Cans. See CANS, Aluminium

ALUMINIUM, Casks, Beer. See BEER, Casks, Aluminium

#### ALUMINIUM, Castings, Solders, Fluxless

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ALUMINIUM, Chemical engineering plant. See CHEMICAL ENGINEERING, Plant, Aluminium

ALUMINIUM, Cladding, Buildings. See BUILDINGS, Cladding, Aluminium

ALUMINIUM, Cladding, Canopies. See CANOPIES, Cladding, Aluminium

ALUMINIUM, Cladding, Ceilings. See CEILINGS, Cladding, Aluminium

ALUMINIUM, Cladding, Roofs, Cathedrals. See CATHEDRALS, Roofs, Cladding, Aluminium

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#### ALUMINIUM, Coating, Chromates

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ALUMINIUM, Coatings, Steel. See STEEL, Coatings, Aluminium

#### ALUMINIUM, Cold working (Impact) Recrystallisation

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ALUMINIUM, Components, Housing. See HOUSING, Components, Aluminium

ALUMINIUM, Conductors, Electrical installations. See

ELECTRICAL INSTALLATIONS, Conductors, Aluminium

ALUMINIUM, Conductors, Lightning. See LIGHTNING, Conductors, Aluminium

ALUMINIUM, Conductors, Overhead power transmission lines. See POWER TRANSMISSION LINES, Overhead, Conductors, Aluminium

ALUMINIUM, Containers, Freight. See FREIGHT, Containers, Aluminium

ALUMINIUM, Cooking utensils. See COOKING, Utensils, Aluminium

#### ALUMINIUM, Corrosion, Cathodic polarisation

Cathodic polarisation of super-purity aluminium in de-aerated acid solutions and the measurement of the corrosion rate. C. W. Goulding & T. C. Downie. *Metallurgia*, 68 (Aug 63) p.93-100. il. refs.

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#### ALUMINIUM, Corrosion, Water, Oxide films, Crystal size

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#### ALUMINIUM, Corrosion, Wood

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ALUMINIUM, Curtain walls. See WALLS, Curtain, Aluminium

ALUMINIUM, Demountable bodies, Motor vehicles. See MOTOR VEHICLES, Bodies, Demountable, Aluminium

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#### ALUMINIUM, Die casting

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GLYCINE

LYSINE

METHIONINE

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**AMSTERDAM**

See

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**AMYL ALCOHOLS**

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**AMYLASES, Additives, Flour. See FLOUR, Additives, Amylases****ANAEROBIC DECOMPOSITION, Ascorbic acid. See ASCORBIC ACID, Anaerobic decomposition****ANAEROBIC TREATMENT, Sewage. See SEWAGE, Treatment, Anaerobic****ANAESTHETICS**

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HALOTHANE

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**ANALOGUE COMPUTERS**, Differential equations solution  
Potential distribution, p-n junctions, Semiconductors.  
See **SEMICONDUCTORS**, p-n junctions, Potential distribution, Differential equations, Solution, Computers, Analogue

**ANALOGUE COMPUTERS**, Differential equations solution  
Townsend discharge. See **TOWNSEND DISCHARGE**, Differential equations, Solutions, Computers, Analogue

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Distillation columns, Refining, Petroleum. See **PETROLEUM**, Refining, Distillation, Columns, Equilibrium, Equations, Solution, Computers, Analogue

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**ANALOGUE COMPUTERS**, Linear induction motor performance. See **ELECTRIC MOTORS**, Induction, Linear Performance, Computers, Analogue

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**ANALOGUE COMPUTERS**, Simulators, Distillation columns. See **DISTILLATION**, Columns, Simulators, Computers, Analogue

**ANALOGUE COMPUTERS**, Simulators, Nuclear reactors. See **NUCLEAR REACTORS**, Simulators, Computers, Analogue

**ANALOGUE COMPUTERS**, Simulators, Sampled-data control systems. See **CONTROL SYSTEMS**, Sampled-data, Simulators, Computers, Analogue

**ANALOGUE COMPUTERS**, Simulators, Superheaters. See **SUPERHEATERS**, Simulators, Computers, Analogue

**ANALOGUE COMPUTERS**, Simulators, Turbo-alternators. See **TURBO-ALTERNATORS**, Simulators, Computers, Analogue

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CHROMATOGRAPHY

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COMPLEXOMETRIC ANALYSIS

CONDUCTIMETRY

GAS ANALYSERS

GAS ANALYSIS

GRAVIMETRY

MICROANALYSIS

NUCLEAR MAGNETIC RESONANCE

PHOTOLYSIS, Flash

PHOTOMETRIC TITRATIONS

PHOTOMETRY, Analysis

PHOTOMETRY, Flame

POLARIMETRY

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POTENTIOMETRIC TITRATIONS

RADIOACTIVATION, Analysis

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SEMI-MICROANALYSIS

SPECTROPHOTOMETERS

SPECTROPHOTOMETRY

SPECTROSCOPY, Emission

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THERMAL CONDUCTIVITY ANALYSIS

THERMOGRAVIMETRY

THERMOMETRIC TITRATIONS

TITRATIONS

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- ANALYSIS, Clinker compound determination, Cement. See CEMENT, Clinker compounds, Determination
- ANALYSIS, Coal. See COAL, Determination of gallium
- ANALYSIS, Coal. See COAL, Determination of germanium
- ANALYSIS, Coal. See COAL, Determination of molybdenum
- ANALYSIS, Coal tar. See COAL TAR, Analysis
- ANALYSIS, Cobalt determination. See COBALT, Determination
- ANALYSIS, Copper determination. See COPPER, Determination
- ANALYSIS, Culture media, Microbiology. See MICRO-BIOLOGY, Cultures, Media, Determination of nitrates
- ANALYSIS, Cyanide determination. See CYANIDES, Determination
- ANALYSIS, Dissolved oxygen determination. See OXYGEN, Dissolved, Determination, Polarography
- ANALYSIS, Disulphide groups. See DISULPHIDE GROUPS, Analysis
- ANALYSIS, Dyes. See DYES, Chemistry, Analysis
- ANALYSIS, Edible oils. See OILS, Edible, Determination of lubricating oils, Synthetic
- ANALYSIS, Fatty acid polymers. See FATTY ACIDS, Polymers, Analysis
- ANALYSIS, Food. See FOOD, Additives, Colour, Determination
- ANALYSIS, Food. See FOOD, Analysis
- ANALYSIS, Free fatty acids, Flour. See FLOUR, Fatty acids, Free, Analysis
- ANALYSIS, Gaseous organic chemicals. See ORGANIC CHEMICALS, Gaseous, Analysis
- ANALYSIS, Glass. See GLASS, Analysis
- ANALYSIS, Glass manufactures. See GLASS, Manufactures, Analysis
- ANALYSIS, Hydrofluoric acid. See HYDROFLUORIC ACID, Analysis
- ANALYSIS, Hydrogen determination. See HYDROGEN, Determination
- ANALYSIS, Inorganic chemicals. See INORGANIC CHEMICALS, Analysis
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- ANALYSIS, Lubricating greases. See LUBRICATING GREASES, Analysis
- ANALYSIS, Malt. See MALT, Analysis
- ANALYSIS, Organic pigments, Paint. See PAINT, Pigments, Organic, Analysis
- ANALYSIS, Pesticides. See PESTICIDES, Determination of chlorine
- ANALYSIS, Petrochemicals production. See PETROCHEMICALS, Production, Analysis
- ANALYSIS, Petroleum refining. See PETROLEUM, Refining, Analysis
- ANALYSIS, Phosphates, Rock. See ROCK, Phosphates, Analysis
- ANALYSIS, Pig iron. See IRON, Pig, Analysis
- ANALYSIS, Plasticisers. See PLASTICISERS, Analysis
- ANALYSIS, Plastics, Paint. See PAINT, Plastics, Analysis
- ANALYSIS, Plutonium. See PLUTONIUM, Analysis
- ANALYSIS, Polymers. See POLYMERS, Analysis
- ANALYSIS, Protein concentrates, Animal feedingstuffs. See ANIMAL FEEDINGSTUFFS, Protein concentrates, Analysis
- ANALYSIS, Pyridine. See PYRIDINE, Analysis
- ANALYSIS, Ream knots, Soda-Lime-Silica-Magnesia glass. See GLASS, Soda-Lime-Silica-Magnesia, Ream knots, Analysis
- ANALYSIS, Roman paint. See PAINT, Roman, Analysis
- ANALYSIS, Rubber. See RUBBER, Analysis
- ANALYSIS, Rubies, Lasers. See LASERS, Rubies, Determination of chromium
- ANALYSIS, Rubies, Lasers. See LASERS, Rubies, Determination of iron
- ANALYSIS, Sapphires, Lasers. See LASERS, Sapphires, Determination of chromium
- ANALYSIS, Sapphires, Lasers. See LASERS, Sapphires, Determination of iron
- ANALYSIS, Stainless steel production. See STEEL, Stainless, Production, Analysis
- ANALYSIS, Thermal. See THERMAL ANALYSIS
- ANALYSIS, Tin determination. See TIN, Determination
- ANALYSIS, Tomato purée. See TOMATOES, Purée, Analysis
- ANALYSIS, Waste gas, Furnaces, Steel production. See STEEL, Production, Furnaces, Waste gas, Analysis
- ANALYSIS, Wool-Cellulosic fibres. See WOOL-CELLULOSIC FIBRES, Analysis
- ANALYSIS, Worts, Brewing. See BREWING, Worts, Analysis
- ANALYSIS, Zinc determination. See ZINC, Determination
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FISHING, Andalusia
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- ANDREASSON JUNIOR LIGHT AIRCRAFT. See AIRCRAFT, Light, Types, Andreasson Junior
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- ANGLESEY  
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WITHERITE, Mining, Anglezarke
- ANGORA-WOOLLEN FABRICS. See FABRICS, Woollen-Angora
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Related Headings:

ANIMALS, Fat, Animal feedingstuffs

HAY

MOLASSES, Animal feedingstuffs

PROTEIN, Extraction, Leaves

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WOOL

**ANIMAL HOUSES**

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- ANISOTROPIC THERMAL EXPANSION, Plutonium. See PLUTONIUM, Thermal expansion, Anisotropic
- ANISOTROPIC THERMAL EXPANSION, Uranium. See URANIUM, Thermal expansion, Anisotropic
- ANISOTROPY, Crystals, Graphite. See GRAPHITE, Crystals, Anisotropy
- ANISOTROPY, Elasticity, Polyethylene terephthalate. See POLYETHYLENE TEREPHTHALATE, Elasticity, Anisotropy
- ANISOTROPY, Forming, Metal sheets. See SHEETS, Metals, Forming, Anisotropy
- ANISOTROPY, Killed steel, Sheets. See SHEETS, Steel, Killed, Anisotropy
- ANISOTROPY, Magnetic. See MAGNETIC ANISOTROPY
- ANISOTROPY, Magnetic, Silicon-Steel, Sheets. See SHEETS, Steel-Silicon, Magnetic anisotropy
- ANISOTROPY, Metals, Sheets. See SHEETS, Metals, Anisotropy
- ANISOTROPY, Microhardness, Single crystals, Magnesium. See MAGNESIUM, Crystals, Single, Microhardness, Anisotropy
- ANISOTROPY, Microhardness, Single crystals, Zinc. See ZINC, Crystals, Single, Microhardness, Anisotropy
- ANISOTROPY, Soil. See SOIL, Anisotropy
- ANISOTROPY, Thermal conductivity, Single crystals, Gallium. See GALLIUM, Crystals, Single, Thermal conductivity, Anisotropy
- ANISOTROPY, Vacuum deposited iron films. See FILMS, Iron, Vacuum deposited, Anisotropy
- ANNEALED GOLD. See GOLD, Annealed
- ANNEALED NIOBIUM. See NIOBIUM, Annealed
- ANNEALED SILVER. See SILVER, Annealed
- ANNEALING
- Related Headings:
- GRAPHITIZATION
- ANNEALING, Aluminium-Magnesium sheets. See SHEETS, Aluminium-Magnesium, Annealing
- ANNEALING, Cold drawn steel tubes. See TUBES, Steel, Cold drawn, Annealing
- ANNEALING, Continuous, Steel strips. See STRIPS, Steel, Annealing, Continuous
- ANNEALING, Continuous, Tinplate. See TINPLATE, Annealing, Continuous
- ANNEALING, Copper alloys. See COPPER, Alloys, Annealing
- ANNEALING, Effect on hydrogen content, Forgings, Steel-Chromium-Nickel-Molybdenum. See STEEL-CHROMIUM-MOLYBDENUM-NICKEL, Forgings, Hydrogen content, Effect of annealing
- ANNEALING, Effect on melting point, Polypropylene. See POLYPROPYLENE, Melting point, Effect of annealing
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- ANNEALING, Pearlitic malleable iron. See IRON, Malleable, Pearlitic, Annealing
- ANNEALING, Polythene crystal. See POLYTHENE, Crystals, Annealing
- ANNEALING, Soda-Lime-Silica glass. See GLASS, Soda-Lime-Silica, Annealing
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- ANNEALING, Steel wires. See WIRES, Steel, Annealing
- ANNULAR FLOW, Air-Water. See AIR-WATER, Flow, Annular
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- ANODISING, Aluminium, Frames, Windows. See WINDOWS, Frames, Aluminium, Anodising
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**ANTI-CORROSIVE PAPER, Packaging, Iron. See IRON, Packaging, Paper, Anti-corrosive**

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See MOTOR CARS, Engines, Cooling, Anti-icing additives

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**ANTIMONY-BERYLLIUM, Sources, Neutrons. See**

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**LANOLIN, Determination of phenolic antioxidants**

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Coverings, Anti-static

ANTI-STATIC POLYSTYRENE. See POLYSTYRENE,  
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NUCLEAR REACTORS, Fast, Instruments, Apprentice-  
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APPRENTICESHIPS, Marine engineering. See MARINE  
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APPRENTICESHIPS, Military engineering. See MILITARY  
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APPROACH CHANNELS, Ports. See PORTS, Approach  
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APPROACH CHANNELS, Terminals, Ships, Tankers. See  
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**APPROXIMATION**

Related Headings:

QUADRATURE

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AQUEOUS SOLUTIONS, Potential, Reference electrodes. See  
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AQUEOUS SOLUTIONS, Silver electrodes. See ELEC-  
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EXTRATERRESTRIAL LIFE, Detection, Instruments

LASERS, Astronautics

SATELLITES, Artificial

**ASTRONAUTICS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Terminology*

*History*

*Education*

*Research*

*Cybernetics*

*Environmental testing*

*Vehicles*

*Flights*

*Uses*

*Laboratories*

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**BLEACHING, Cellulosic fabrics.** See FABRICS, Cellulosic,  
Bleaching

**BLEACHING, Cotton, Fabrics.** See FABRICS, Cotton,  
Bleaching

**BLEACHING, Cotton, Household textiles.** See HOUSEHOLD  
TEXTILES, Cotton, Bleaching

**BLEACHING, Textiles.** See TEXTILES, Bleaching

**BLENDED FABRICS.** See FABRICS, Blended

**BLENDING.** See MIXING

**BLENDING, Coal.** See COAL, Blending

**BLENDING, Fuel oil.** See FUEL OIL, Blending

**BLENDING, Iron ores.** See IRON, Ores, Blending

**BLENDING, Polystyrene-Styrene-Butadiene rubber.** See  
POLYSTYRENE-STYRENE-BUTADIENE RUBBER,  
Blending

**BLENDING, Woollen yarns, Carpets.** See CARPETS, Yarns,  
Woollen, Blending

**BLIND OLD PEOPLE, Housing.** See HOUSING, Old people,  
Blind

**BLIND PEOPLE, Operators, Capstan lathes.** See LATHES,  
Capstan, Blind operators

**BLIND PEOPLE, Straight line travel aids, Radio, Receivers,  
Transistor, Portable, Aerials, Rods, Ferrite**

Straight-line travel aid for the blind. J. C. Swail. *Elec-  
tronic Engng.*, 35 (Sep 63) p.602-4. il.

**BLIND PEOPLE, Ultrasonic guidance aids**

Ultrasonic radar guides the blind. C. Manning. *Design &  
Components in Engng.* (Apr 63) p.32-8. il.

**BLIND READERS, Reading machines**

Some experiments on reading aids for the blind. K. Ellis.  
Radio & Electronic Engr., 25 (Feb 63) p.188-90. il.

**BLINDS, Venetian, Aluminium, Coated**

Pre-coated aluminium strip [James Booth Aluminium Ltd.]  
Industrial Finishing, 15 (Jul 63) p.49-51. il.

**BLINDSTITCH MAKING-UP, Foamback fabrics, Knitwear.**

See KNITWEAR, Fabrics, Foamback, Making-up, Blind-stitch

**BLISTER COPPER. See COPPER, Blister****BLISTER PACKAGING. See PACKAGING, Blister****BLISTERING, Paint. See PAINT, Blistering****BLOCK POLYMERS. See POLYMERS, Block****BLOCKING, Industrial fatigue. See INDUSTRIAL FATIGUE, Blocking****BLOCKING OSCILLATORS. See OSCILLATORS, Blocking****BLOCKING OSCILLATORS, Heart stimulators. See HEART, Stimulators, Oscillators, Blocking****BLOCKS, Aluminium, Engines, Motor cars. See MOTOR CARS, Engines, Blocks, Aluminium****BLOCKS, Concrete, Handling**

Handling an output of 20,000 concrete blocks a day [Milton  
Concrete (Kent), Ltd.] K. Mumby. Mechanical Handling, 50  
(Jun 63) p.321-5. il.

**BLOCKS, Concrete, Manufactures, Machines, Control systems**

Automation controls quality in concrete block production.  
Concrete Q. (Apr/Jun 63) p.28-9. il.

**BLOCKS, Diesel engines, Motor vehicles. See MOTOR**

VEHICLES, Diesel engines, Blocks

**BLOCKS, Engines, Jeeps. See JEEPS, Engines, Blocks****BLOCKS, Engines, Motor cars. See MOTOR CARS, Engines, Blocks****BLOCKS, Hauling gear, Trawlers. See TRAWLERS, Hauling gear, Blocks****BLOCKS, Measuring. See MEASURING BLOCKS****BLOCKS, Wood, Floors. See FLOORS, Blocks, Wood****BLOCKS, Wood, Roadways, Bridges. See BRIDGES, Roadways, Blocks, Wood****BLOCKS, Wood, Surfaces, Roads. See ROADS, Surfaces, Blocks, Wood****BLOCKSHIPS, Ports**

Changing conditions of foreshore at Dover Harbour: effect of  
the introduction & removal of temporary blockships at  
Western entrance. J. W. Sutton. Dock & Harbour Author-  
ity, 43 (Jan 63) p.296-8. il.

**BLOEMENDAL, H.**

Zone electrophoresis in blocks and columns: reviewed.  
Chemistry & Industry (21 Sep 63) p.1543-4

**BLOOD, Extracorporeal circulation, Equipment**

Engineering aspects of extracorporeal blood circulation.  
B. G. B. Lucas & S. R. Montgomery. Proc. of Instrn. of  
Mechanical Engrs., 177 no.18 (1963) p.503-17. il. refs.

**BLOOMING, Paint. See PAINT, Blooming****BLOW INJECTION MOULDING, Thermoplastics. See**

THERMOPLASTICS, Moulding, Injection, Blow

**BLOW MOULDED P.V.C. CONTAINERS. See CONTAINERS, P.V.C., Blow moulded****BLOW MOULDED POLYTHENE BOTTLES. See BOTTLES, Polythene, Blow moulded****BLOW MOULDED THERMOPLASTICS, Bottles. See**

BOTTLES, Thermoplastics, Blow moulded

**BLOW MOULDING, High density polythene. See POLYTHENE, High density, Moulding, Blow****BLOW MOULDING, Thermoplastics. See THERMOPLASTICS, Moulding, Blow****BLOW MOULDING, Thermoplastics, Containers. See CON- TAINERS, Thermoplastics, Moulding, Blow****BLOWBACK, Burners, Oil-fired boilers. See BOILERS, Oil-fired, Burners, Blowback****BLOWDOWN, Boilers. See BOILERS, Blowdown****BLOWERS, Gas cooled nuclear reactors. See NUCLEAR REACTORS, Gas cooled, Circulators****BLOWING, Glass, Containers. See CONTAINERS, Glass, Blowing****BLOWING, Glass, Laboratories. See LABORATORIES, Glass, Blowing****BLOWING AGENTS, Expanded polymers. See POLYMERS, Expanded, Blowing agents****BLOWING MACHINES**

Related Headings:

BELLOWS

**BLUE WATER GAS. See WATER GAS****BLUEING, Sintered powder metallurgy, Iron. See IRON, Powder metallurgy, Sintered, Blueing****BLUFF BODY STABILISATION, Laminar flames. See FLAMES, Laminar, Stabilisation, Bluff body****BLUNT BODIES, Gas flow, Hypersonic, Effect of vibrational relaxation**

Effects of vibrational relaxation on hypersonic flow past blunt bodies. P. A. Blythe. Aeronautical Q., 14 (Nov 63) p.357-73. il. refs.

**BLYTH**

See

POWER STATIONS, Blyth

**BOARD, Bagasse, Production**

Automatic dry-process bagasse board plant. J. Mantel.  
International Sugar J., 65 (May 63) p.144-5. il.

**BOARD, Paper, Boxes, Flowers. See FLOWERS, Boxes, Paper board****BOARD, Paper, Cartons. See CARTONS, Paper board****BOARD, Paper, Coated, Effect of humidity**

Importance of relative air humidity for coated papers and board and its control during manufacture (abridged)  
M. Judt. Paper Market (Oct 63) p.12+. refs.

**BOARD, Paper, Corrugated**

Corrugated board—light, strong and adaptable. E. C. Winn.  
Paper & Print, 36 (Autumn 63) p.259-60. il.

**BOARD, Paper, Corrugated, Containers. See CONTAINERS, Board, Corrugated****BOARD, Paper, Corrugated, Manufactures**

Corrugated board of higher quality. Packaging, 34 (Nov 63) p.40-4. il.

**BOARD, Paper, Corrugated, Manufactures, Machines**

French machines for the corrugated industry. World's  
Paper Trade Rev., 160 (12 Sep 63) p.808+. il.

**BOARD, Paper, Manufactures, Factories**

Cardboard factory Fors, Sweden. Industrial Architecture, 6  
(Nov 63) p.789-91. il.

**BOARD, Paper, Manufactures, Machines**

New automated machine produces speciality boards at  
Bourne End. World's Paper Trade Rev., 160 (17 Oct 63) p.1251+. il.

Sweden's new board mill has an Inverform machine [A. B. Iggesunds Bruk] World's Paper Trade Rev., 160 (5 Dec 63) p.1877-8. il.

**BOARD, Paper, Manufactures, Moisture content, Measurement, Instruments**

Application problems of a board machine basis weight and moisture system. E. H. Carter. World's Paper Trade Rev., 160 (31 Oct 63) p.1420+. il.

**BOARD, Paper, Manufactures, Ventilation**

Trends and possibilities in the ventilation of paper and board mills. R. G. Sands. Paper Technology, 4 (Jun 63) p.280-92. il.

**BOARD, Paper, Manufactures, Waste paper, Cleaning**

Stock cleaning in a boardmill. K. A. Hyam. Paper Technology, 3 (Dec 62) p.557-64. il. refs.

**BOARD, Paper, Printing. See PRINTING, Board, Paper****BOARD, Paper, Sheet, Counters**

Boxmaking boards by count [Thompson Hydrind Mark 4]  
Paper Market (Mar 63) p.27. il. refs.

**BOARD, Paper, Tests**

Section profiles: paper and board test development. What we are doing (Oct 63) p.17-21. il.

**BOARD, Paper, Thickness, Measurement, Micrometers**

Evaluation of a motor driven micrometer [1602/EL] J. W. Scott. What we are doing (Jun 63) p.29-35. il.

**BOARD-MARKED CONCRETE, External walls, Office**

buildings. See OFFICE BUILDINGS, Walls, External, Concrete, Board-marked

**BOARD ROOMS, Interior decoration**

Heraldry in a modern setting. J. H. Goodier. Painting & Decorating, 83 (Aug 63) p.52+. il.

**BOATHOUSES, Timber**

Boathouse for Eton College. Wood, 28 (Jul 63) p.286-8. il.

**BOATS**

Open boats. Motor Boat, 98 (Mid Jan 63) p.32-3. il.

**BOATS**

Related Headings:

CANOE  
DINGHIES  
KETCHES

**BOATS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Safety*

Technical operations

Equipment  
Hand tools  
Building  
Maintenance  
Laying up  
Lighting  
Transport

Materials

Hardwoods  
Metalwork  
Aluminium  
Plastics  
Acrylonitrile-Butadiene-Styrene  
Polyester-Glass fibre  
Epoxy resin-Glass fibre  
Concrete

Components

Hulls  
Masts  
Sails  
Electronic equipment  
Nails  
Ropes

Kinds of boats

Motor  
Steam

**BOATS, Acrylonitrile-Butadiene-Styrene, Forming, Vacuum**

Vacuum formed ABS boat. Brit. Plastics, 36 (Jan 63) p.22-3. il.

**BOATS, Aluminium**

Alloy in the shipyard. Ship & Boat Builder, 16 (Dec 63) p.29-30

Aluminium for boats. G. A. Caddick. Motor Boat, 98 (5 Apr 63) p.66-7. il.

Introduction to aluminium construction. Ship & Boat Builder, 16 (Oct 63) p.25-6

Review of some notable constructions. Ship & Boat Builder, 16 (Nov 63) p.33-6. il.

**BOATS, Building**

Boatbuilding in Holland. F. H. Snoxell. Motor Boat, 98 (22 Mar 63) p.48-9. il.

Bombay yard maintains a steady flow of work. Ship & Boat Builder, 16 (Mar 63) p.48-9. il.

Competition in boatbuilding. R. O. Tough. Wood, 28 (Jan 63) p.19-21. il.

**BOATS, Building, Woodworking machines**

Woodworking machinery: "universal" machines of most use to the builder? Ship & Boat Builder, 16 (Dec 63) p.38-9. il.

**BOATS, Concrete**

Bright future ahead for concrete boats: and new quay heading piles may interest marina developers. Ship & Boat Builder, 16 (Dec 63) p.76-7. il.

**BOATS, Electronic equipment**

As the market for small boats grows, so do the electronics. Electronics Weekly (9 Jan 63) p.6. il.

Electronics afloat. E. L. Delmar-Morgan. Motor Boat, 98 (8 Mar 63) p.82-3. il.

**BOATS, Epoxy resin-Glass fibre**

De Vries Lentsch launch... and a new Romany Cruiser. Ship & Boat Builder, 16 (May 63) p.40. il.

Symphony in plastics. Motor Boat, 99 (23 Aug 63) p.30-1. il.

**BOATS, Epoxy resin-Glass fibre, Durability**

Report on the long term durability of resin glass boats. B. Cobb Jr. Ship & Boat Builder, 16 (Feb 63) p.41-2

**BOATS, Fishing. See FISHING, Vessels****BOATS, Hand tools, Maintenance, Winter**

Looking after tools in winter. Motor Boat, 99 (18 Oct 63) p.38-9. il.

**BOATS, Hardwoods, West African**

Wider choice of timbers for boatbuilders. Ship & Boat Builder, 16 (Jan 63) p.84-5

Wider choice of timbers for boatbuilders. Ship & Boat Builder, 16 (Feb 63) p.39-40. il.

**BOATS, Hulls**

Dual-purpose hull. C. Violet. Motor Boat, 99 (18 Oct 63) p.28-9. il.

**BOATS, Hulls, Design**

Built on the Broads for open waters. Motor Boat, 98 (14 Jun 63) p.84-5. il.

Hull and sail design. J. C. Sainsbury. Ship & Boat Builder, 16 (Mar 63) p.50-1. il.

**BOATS, Laying up**

Do your own laying-up survey. Motor Boat, 99 (18 Oct 63) p.20-2. il.

How & where to lay up. Motor Boat, 99 (4 Oct 63) p.18-20. il.

**BOATS, Laying up, Painting**

Dab in time to save nine. H. C. Atkinson. Motor Boat, 99 (1 Nov 63) p.14-16. il.

**BOATS, Lighting**

Lighting for small craft. Motor Boat, 98 (Mid-Feb 63) p.56. il.

**BOATS, Maintenance**

Care & maintenance of small craft. J. Teale. Motor Boat, 98 (22 Mar 63) p.58-9. il.

**BOATS, Masts, Aluminium**

Aluminium masts chosen for small boats. Light Metals, 26 (Feb 63) p.21-3. il.

**BOATS, Metalwork, Manufacture**

Sheet metal for small boat production: some details of manufacturing procedure at Thanet Ware Ltd. Sheet Metal Industries, 40 (Oct 63) p.722-4. il.

**BOATS, Metalwork, Underwater, Corrosion, Protection**

Re-fitting and fitting out, pt.1: protecting under-water metalwork. Ship & Boat Builder, 16 (Mar 63) p.52-3. il.



**BOATS, Motor**

- "Black Marlin". Motor Boat, 99 (26 Jul 63) p.24-5. il.  
 Choice of canal boats. Motor Boat, 98 (28 Jun 63) p.50-1. il.  
 Elegance & utility. Motor Boat, 99 (20 Sep 63) p.32-3. il.  
 Fast twin-screw launch. Motor Boat, 98 (Mid Feb 63) p.41. il.  
 £500 family cruiser—construction. Motor Boat, 98 (Early Feb 63) p.36-7. il.  
 "Lindsay Chase". Motor Boat (Mid Dec 62) p.42-3. il.  
 Motor cruisers. Motor Boat, 98 (Mid Jan 63) p.25-7. il.  
 Pacemaker 29. Motor Boat, 98 (17 May 63) p.48. il.  
 Show boats we have tried. Motor Boat (Mid Dec 62) p.29-31. il.  
 Some of the canal boats at the Show. Motor Boat (Mid Dec 62) p.48-9. il.  
 "Starting motor boating" D. A. Rayner. Motor Boat, 98 (Early Feb 63) p.42-3. il.  
 28-ft. fast cruisers: Easticks Yacht Station, Waverider. Motor Boat, 99 (9 Aug 63) p.28-9. il.  
 Twin-screw Italian motor cruiser. Shipbuilding & Shipping Record, 101 (28 Mar 63) p.412. il.  
 Two fast cruisers. Motor Boat, 98 (22 Mar 63) p.52-3. il.  
 Two fast outdrive cruisers. Motor Boat, 98 (17 May 63) p.58-9. il.  
 Weymouth 20-footer. Motor Boat, 98 (Mid Feb 63) p.39. il.  
 "Zingara". Motor Boat, 99 (9 Aug 63) p.24. il.

**BOATS, Motor, Batteries**

- Choice of batteries: lead-acid or nickel-iron? J. L. Beilschmidt. Motor Boat, 98 (17 May 63) p.68+. il.

**BOATS, Motor, Conversion from lifeboats**

- Sea-going conversion. Motor Boat, 98 (5 Apr 63) p.80-1. il.

**BOATS, Motor, Design**

- High-speed boat design. A. McLachlan. Motor Boat, 99 (15 Nov 63) p.21-3. il.

**BOATS, Motor, Diesel engines**

- Compact and powerful conversion [Newage/BMC "Captain" 1½ litre] Ship & Boat Builder, 16 (Dec 63) p.58-60. il.  
 Diesels used on inland waterways. Oil Engine & Gas Turbine, 31 (Dec 63) p.33-4. il.  
 45 h.p. Petter air-cooled diesel. Ship & Boat Builder, 16 (Oct 63) p.54-6. il.  
 Marine engines in the making. Oil Engine & Gas Turbine, 31 (Dec 63) p.21.  
 Marine diesels for many purposes. Motor Boat, 99 (23 Aug 63) p.44-5. il.  
 New range of marine diesels to fill a demand from abroad [Bamford 6-8 h.p.] Motor Boat, 98 (14 Jun 63) p.92. il.  
 Proved in service. [Perkins 6,354 (M) diesel] F. H. Snoxell. Motor Boat, 99 (4 Oct 63) p.28-9. il.  
 Proved in service: the Parsons Pike—a Ford-based diesel of 25-56 s.h.p. F. H. Snoxell. Motor Boat, 99 (1 Nov 63) p.34-5. il.  
 Proved in service: the Petter PHM small air-cooled diesel engines of 6.25 to 16.4 h.p.—also available with water cooling. F. H. Snoxell. Motor Boat, 99 (18 Oct 63) p.30-1. il.

**BOATS, Motor, Diesel engines, Outboard**

- High-performance lightweight small diesels. Mechanical Power, 59 (Jul 63) p.208-12. il.

**BOATS, Motor, Electrical equipment, Maintenance**

- Laying up & winter work: electrical system. T. G. Harrop. Motor Boat, 99 (29 Nov 63) p.36-7. il.

**BOATS, Motor, Engines**

- Buying horsepower. P. J. Bowyer. Motor Boat (Mid Dec 62) p.44+.  
 Engine observations. F. H. Snoxell. Motor Boat (Mid Jan 63) p.36-9. il.  
 Installing an inboard/outboard. Ship & Boat Builder, 16 (Oct 63) p.38+. il.  
 Main machinery—four Jaguar engines. Marine Engr. & Naval Architect, 86 (Oct 63) p.474-6. il.  
 New Rolls-Royce lightweight V8 petrol engine. Motor Boat (Early Jan 63) p.160-2. il.  
 Perkins Z-drive & new outboard motor. Motor Boat, 98 (Early Jan 63) p.176+. il.  
 Routes new range. Motor Boat, 98 (Early Jan 63) p.169. il.

**BOATS, Motor, Engines, Buyers' guides**

- Propelling engines: buyers' guide. Motor Boat, 99 (15 Nov 63) p.45+

**BOAT, Motor, Engines, Cooling systems, Heating, Hot water**

- Hot water for boats. H. M. Everett. Motor Boat, 98 (8 Mar 63) p.120. il.

**BOATS, Motor, Engines, Fuels, Tanks**

- Re-fitting and fitting out, pt.3: fuel storage—a plan for increasing capacity. M. F. Gunning. Ship & Boat Builder, 16 (Mar 63) p.55-7. il.

**BOATS, Motor, Engines, Maintenance**

- Engine overhaul and refit after laying-up. R. E. Reyner. Ship & Boat Builder, 16 (Mar 63) p.78-81. il.  
 Engine overhaul and refit after laying up, pt.2. R. E. Reyner. Ship & Boat Builder, 16 (Apr 63) p.54-7. il.  
 Engine overhaul and refit after laying up, pt.3. R. E. Reyner. Ship & Boat Builder, 16 (May 63) p.58-60. il.  
 Engine overhaul and refit after laying up, pt.5. R. E. Reyner. Ship & Boat Builder, 16 (Jul 63) p.60-2. il.  
 Preparing your engine. F. H. Snoxell. Motor Boat, 98 (8 Mar 63) p.98-9. il.

**BOATS, Motor, Engines, Outboard, Maintenance**

- Outboard re-fitting. B. Bailey. Motor Boat, 98 (8 Mar 63) p.92-3. il.

**BOATS, Motor, Equipment, Liquefied petroleum gas**

- Bottled gas—uses and safety precautions. Dolphin. Motor Boat, 98 (Early Feb 63) p.48+. il.

**BOATS, Motor, Fires, Prevention**

- Laying up & winter work: fire prevention. Motor Boat, 99 (29 Nov 63) p.38-9. il.

**BOATS, Motor, Fitting out**

- Fitting out—pre-season tips for the job. Motor Boat, 98 (8 Mar 63) p.74-7. il.

**BOATS, Motor, Gas turbines**

- Gas turbines for unconventional craft, pt.1. G. L. Graves & R. S. Carleton. Hovering Craft & Hydrofoil, 3 (Oct 63) p.6+. il.  
 Gas turbines in ex-M.T.B. Motor Boat, 99 (15 Nov 63) p.34-5. il.

**BOATS, Motor, Gears, Maintenance**

- Engine overhaul and refit after laying up, pt.4. R. E. Reyner. Ship & Boat Builder, 16 (Jun 63) p.64-7. il.

**BOATS, Motor, Hulls, Concrete, Reinforced**

- Thin-shell reinforced concrete in the UK [Windboats Limited, Wroxham] Engineering, 195 (8 Feb 63) p.232-3. il. ref.

**BOATS, Motor, Hulls, Plastics**

- Two for the Broads: a timber & a plastics-hulled craft for hire. Motor Boat, 99 (29 Nov 63) p.25-6. il.

**BOATS, Motor, Hulls, Wood**

- Two for the Broads: a timber & a plastics-hulled craft for hire. Motor Boat, 99 (29 Nov 63) p.25-6. il.

**BOATS, Motor, Hydrofoil**

- Alexander Graham Bell's hydrofoils. *Hovering Craft & Hydrofoil*, 2 (Feb 63) p.12-13. il.
- Belgian naval architect looks at hydrofoils. C. E. A. Pringiers. *Hovering Craft & Hydrofoil*, 2 (Aug 63) p.10-17. il. refs.
- Design and development of the AG(EH) R.J. Cyphers. *Hovering Craft & Hydrofoil*, 2 (Dec 62) p.8-11. il.
- Future of the hydrofoil. C. Borgenstam. *Hovering Craft & Hydrofoil*, 2 (Apr 63) p.12-15. il.
- Hovercraft and hydrofoil vessels: review of recent developments. *Dock & Harbour Authority*, 44 (May 63) p.9-12. il. ref.
- Hovercraft and hydrofoils: a survey. M. Thornton. *Shipping World*, 148 (9 Jan 63) p.133+. il.
- Hydro-aeroplane boats of Enrico Forlanini. G. Zangakis. *Hovering Craft & Hydrofoil*, 2 (Jan 63) p.6+. il.
- Hydrofins and hydrofoils. J. Vintenon. *Hovering Craft & Hydrofoil*, 2 (Jun/Jul 63) p.23-5. il.
- Hydrofoil boat. C. Hook. *Shipbuilding & Shipping Record*, 101 (28 Mar 63) p.410+. il.
- Hydrofoil craft. *Ship & Boat Builder*, 16 (Jan 63) p.71
- Hydrofoil craft "Denison". *Marine Engr. & Naval Architect*, 86 (Jan 63) p.32. il.
- Hydrofoil for 300 passengers. *Shipping World*, 149 (6 Nov 63) p.722+. il.
- Hydrofoil personality: Baron Hans von Schertel. *Hovering Craft & Hydrofoil*, 2 (Mar 63) p.10-12. il.
- Hydrofoil progress. *Motor Boat*, 99 (6 Sep 63) p.46-8. il.
- Hydrofoil runabout [Batoum & Red Sormovo Shipyards Molnia] *Hovering Craft & Hydrofoil*, 2 (Aug 63) p.22-3. il.
- Hydrofoils—a "state of the art" summary. O. H. Oakley. *Hovering Craft & Hydrofoil*, 2 (Feb 63) p.14-26. il. refs.
- Hydrofoils—in the U.S.A. and Europe, pt.1. L. Walter. *Ship & Boat Builder*, 16 (Jul 63) p.34-5. il.
- Hydrofoils—in the U.S.A. and Europe, pt.2. L. Walter. *Ship & Boat Builder*, 16 (Aug 63) p.60-2. il. ref.
- Hydrofoils—the changing scene. H. von Schertel. *Hovering Craft & Hydrofoil*, 2 (Sep 63) p.13-15. il.
- Sirena of the Aland Sea. E. O. Soravuo. *Hovering Craft & Hydrofoil*, 2 (Jun/Jul 63) p.12-13. il.
- Skydrofoil progress. *Hovering Craft & Hydrofoil*, 3 (Oct 63) p.21-2. il.
- Supramar offer U.K. licence. *Ship & Boat Builder*, 16 (Nov 63) p.45. il.
- Supramar's 300 passenger hydrofoil. *Hovering Craft & Hydrofoil*, 2 (Apr 63) p.10-11. il.

**BOATS, Motor, Hydrofoil, Aluminium**

- Hydrofoil craft for fast passenger transport. *Aluminium Courier* (Sep 63) p.14-18. il.

**BOATS, Motor, Hydrofoil, Control systems**

- Control systems on the Denison. *Hovering Craft & Hydrofoil*, 2 (Jan 63) p.19. il.

**BOATS, Motor, Hydrofoil, Japan**

- Japan's hydrofoil builders off to a flying start. *Hovering Craft & Hydrofoil*, 2 (May 63) p.12-17. il.

**BOATS, Motor, Hydrofoil, Naval**

- Naval uses of hydrofoils. J. J. Stilwell & W. R. Porter. *Hovering Craft & Hydrofoil*, 2 (Jun/Jul 63) p.14-17. il.

**BOATS, Motor, Hydrofoil, Water-jet**

- Water-jet hydrofoil. *Hovering Craft & Hydrofoil*, 2 (Jan 63) p.20. il.

**BOATS, Motor, Machinery, Maintenance**

- Preserving your power. F. H. Snoxell. *Motor Boat*, 99 (15 Nov 63) p.24+. il.

**BOATS, Motor (Planing) Gas turbines**

- Experimental boat installation by Rover. *Oil Engine & Gas Turbine*, 31 (Mid Oct 63) p.47-8. il.

**BOATS, Motor (Planing) Hulls, Design**

- Performance and hull form of fast planing craft, pt.1. G. N. Hatch. *Ship & Boat Builder*, 16 (Feb 63) p.26-7. refs.
- Performance and hull form of fast planing craft, pt.2. G. N. Hatch. *Ship & Boat Builder*, 16 (Mar 63) p.58-60. il.
- Performance and hull form of fast planing craft, pt.3. G. N. Hatch. *Ship & Boat Builder*, 16 (Apr 63) p.29-31. il. refs.
- Performance and hull form of fast planing craft, pt.4. G. N. Hatch. *Ship & Boat Builder*, 16 (May 63) p.34-6. il. refs.
- Performance and hull form of fast planing craft, pt.5. G. N. Hatch. *Ship & Boat Builder*, 16 (Jun 63) p.42-4. il.

**BOATS, Motor, Propellers**

- Buying horsepower. P. J. Bowyer. *Motor Boat* (Mid Dec 62) p.44+

**BOATS, Motor, Propellers, Variable pitch**

- Variable-pitch propellers. *Motor Boat*, 98 (22 Mar 63) p.62-3. il.
- Variations of a V.P. propeller set [Watermota] *Motor Boat*, 99 (9 Aug 63) p.38. il.

**BOATS, Motor, Radio, Interference (Engines) Suppression**

- Problem of radio interference. D. L. M. Williams. *Ship & Boat Builder*, 16 (Nov 63) p.37

- BOATS, Motor, River police. See *POLICE, River, Boats, Motor*

**BOATS, Motor, Sails, Auxiliary**

- Auxiliary sail plans—for steady & emergency use. *Motor Boat*, 99 (26 Jul 63) p.38-9. il.

**BOATS, Nails, Copper alloy**

- Taming of the screw ["Gripfast" barbed nails] *Copper* (Spring 63) p.18-19. il.

**BOATS, Plastics**

- Plastics make progress in boat building. *Brit. Plastics*, 35 (Dec 62) p.604-11. il.

**BOATS, Plastics, Reinforced**

- Practical approach to design & construction of marine reinforced plastics structures. T. Kirby. *Reinforced Plastics*, 7 (Feb 63) p.192-5
- W. & J. Tod's reinforced plastics products. *Reinforced Plastics*, 7 (Jan 63) p.148-50. il.

**BOATS, Plastics, Reinforced—Glass fibre**

- Design and construction of ships from G.R.P., pt.2. J. Ch. de Does & A. J. Wimmers. *Plastics*, 28 (Sep 63) p.131-2. il. refs.

- Report on long-term durability of glass-fibre boats.

- Broughton Cobb, jr. *Reinforced Plastics*, 7 (Mar 63) p.211-13

**BOATS, Polyester—Glass fibre**

- "Eclipse" sloop in glass-fibre—timber superstructure as an alternative. *Reinforced Plastics*, 7 (Jun 63) p.301. il.

**BOATS, Polyester—Glass fibre, Maintenance, Winter**

- Winter care of resin-glass. *Motor Boat*, 99 (1 Nov 63) p.22-3. il.

**BOATS, Ropes**

- Knowing the ropes. H. C. Ferguson. *Motor Boat*, 99 (15 Nov 63) p.36-7. il.

**BOATS, Safety**

- Safety is your business. P. Mytton-Davies. *Ship & Boat Builder*, 16 (May 63) p.75-6

**BOATS, Sails, Design**

- Hull and sail design. J. C. Sainsbury. *Ship & Boat Builder*, 16 (Mar 63) p.50-1. il.

**BOATS, Steam**

- 900 miles in the wake of the Australian pioneers. J. A. Norris. *Light Steam Power*, 12 (Nov/Dec 63) p.262-9. il.
- S.L. "Ceiliiosstuu": steamboating with economy. *Light Steam Power*, 12 (Mar/Apr 63) p.74-7. il.

**BOATS, Steam, Hydrofoil**

- Comte de Lambert's hydroplane. *Hovering Craft & Hydrofoil*, 2 (Feb 63) p.10. il.

**BOATS, Steam, Paddle wheels**

- Marine steam engine designs. Light Steam Power, 12 (Nov/Dec 63) p.283-8. il.  
 Paddle wheels. Light Steam Power, 12 (Nov/Dec 63) p.298-302. il.  
 Position of paddle wheels. Light Steam Power, 12 (Sep/Oct 63) p.217-20. il.

**BOATS, Transport, Road trailers**

- Deep-sea trawlermen. R. Butler. Motor Boat, 98 (19 Apr 63) p.71-2. il.

**BOBBINS**, Cross-wound, Winding, Yarns. See **YARNS**, Winding, Yarns. See **YARNS**, Winding, Cross-wound bobbins

**BODIES (Agricultural vehicles) Wood**

- Catering for the farmers' needs. S. F. Page. Woodworking Industry, 20 (Feb 63) p.73+. il.

**BODIES**, Aluminium, Road tankers, Transport, Oil, Transformers. See **TRANSFORMERS**, Oil, Transport, Road tankers, Bodies, Aluminium

**BODIES**, Aluminium-Polyurethane, Passenger rolling stock, Railways. See **ROLLING STOCK**, Passenger, Railways, Bodies, Aluminium-Polyurethane

**BODIES, Buses**

- Changing scene in bodybuilding. W. Lambden. Bus & Coach, 35 (Aug 63) p.292-4. il.

**BODIES (Buses) Maintenance**

- Simple body repairs. P. M. A. Thomas. Bus & Coach, 35 (Aug 63) p.295+. il.

**BODIES (Buses) Plastics, Reinforced-Glass fibre**

- Reinforced plastics in road passenger transport. Brit Plastics, 36 (Oct 63) p.554-7. il.

**BODIES (Buses) Standardisation**

- Standardisation of motor buses: reports to the international union indicate wide variations between European countries. Passenger Transport, 126 (Sep 63) p.498-9

**BODIES (Buses) Steel**

- All-steel bus body for Montevideo. Motor Body, 131 (Jan 63) p.22-3. il.

**BODIES (Buses) Varnishes, Spraying, Hot**

- Frequent varnishing cuts out repainting. M. Clements. Bus & Coach, 35 (Mar 63) p.109. il.

**BODIES (Cattle trucks) Plywood**

- Plywood bodies show up well on cattle haulage. Commercial Vehicles, 37 (Aug 63) p.36. il.

**BODIES, Commercial vehicles**

- Ford's chassis policy change means better business for bodybuilders. Commercial Vehicles, 35 (Oct 63) p.71-83. il.

**BODIES (Commercial vehicles) Aluminium**

- Demountable bodies save vehicle loading time ["Dekalay"] Motor Body, 131 (Apr 63) p.32. il.

**BODIES (Commercial vehicles) Manufactures, Directories**

- Directory of bodybuilders. Commercial Motor, 117 (3 May 63) p.97-100

**BODIES (Commercial vehicles) Plastics, Reinforced**

- Making plastics in bodywork pay its way. S. F. Page. Commercial Vehicles, 37 (Dec 63) p.64+. il.

**BODIES (Commercial vehicles) Plastics, Reinforced-Glass fibre**

- One-piece moulded bodywork. S. F. Page. Motor Body, 131 (Apr 63) p.16-17. il.

**BODIES (Commercial vehicles) Wood**

- Choosing the right construction for the Continent. S. F. Page. Woodworking Industry, 20 (Jan 63) p.32-3. il.

**BODIES (Lorries) Plastics, Reinforced-Glass fibre**

- Economic study of GRP trucks. Rubber & Plastics Weekly, 144 (16 Feb 63) p.201+. il.

**BODIES, Motor cars**

- Body construction—saloon body types. G. F. Moseley. Motor Body, 131 (Apr 63) p.35-6

- Design, development and testing. L. F. Atkinson. Motor Body, 132 (Sep 63) p.14-16. il. refs.

- Industrial design in the motor industry: development of styling. N. Chapman. Engineering, 196 (13 Sep 63) p.333-4. il.

- Industrial design in the motor industry: Italian influence. R. Bradshaw. Engineering, 196 (13 Sep 63) p.336. il.

- International review of coachwork. C. W. Ward. Automobile Engr., 53 (Jun 63) p.274-85. il.

- Vauxhall PB hull construction. Motor Body, 131 (Mar 63) p.15. il.

- Vauxhall's Viva: advanced features in construction and assembly to speed repair and replacement. Motor Body, 132 (Oct 63) p.19-21. il.

**BODIES (Motor cars) Aerodynamics**

- Industrial design in the motor industry: aerodynamics and practical aspects. P. Cambridge. Engineering, 196 (13 Sep 63) p.334-5. il.

**BODIES (Motor cars) Assembly**

- Decentralized assembly for Rover 2000. D. Scott. Metalworking Production, 107 (30 Oct 63) p.55-8. il.

**BODIES (Motor cars) Coating, Silicones**

- Finishing with silicone resins. Motor Body, 130 (Dec 62) p.19

**BODIES (Motor cars) Conversion**

- Quality added. D. B. Tubbs. Motor, 124 (24 Jul 63) p.59-62. il.

**BODIES (Motor cars) Design**

- Living room: ins and outs of today's car body design.

- R. Barker. Autocar, 119 (1 Nov 63) p.850-5. il.

- Styling trends: as revealed at the Earl's Court Motor Show. Automotive Body Engrng., 132 (Nov 63) p.14-17. il.

**BODIES (Motor cars) Design, Safety**

- Body structure for safety. Autocar, 119 (1 Nov 63) p.884-5. il.

**BODIES (Motor cars) De-waxing**

- Volkswagen's de-waxing lines. Industrial Finishing, 15 (Jan 63) p.39. il.

**BODIES (Motor cars) Factories, Architecture**

- Car body plant. Industrial Architecture, 5 (Dec 62) p.802-4. il.

**BODIES (Motor cars) Finishing**

- Deep-dip finish for Canadian cars. Product Finishing, 16 (Mar 63) p.71-3. il.

- Mile of paint ovens at Ford's new Halewood plant. Product Finishing, 16 (Sep 63) p.54+. il.

- Production line finishing of the Rover 2000. P. T. Culshaw. Paint J., 16 (Oct 63) p.459+. il.

- Quality finishing Rolls Royce. Product Finishing, 16 (Feb 63) p.60-6. il.

- Trends in refinishing. J. Merchant. Paint J., 16 (Oct 63) p.450-1

**BODIES (Motor cars) Manufactures**

- Car production returns to Scotland: Linwood factory of Rootes officially opened. Sheet Metal Industries, 40 (Jun 63) p.406-8. il.

- James Young celebrate 100 years of quality coachwork. Motor Body, 131 (Jul 63) p.30-1. il.

- No coaches. D. B. Tubbs. Motor, 123 (24 Jul 63) p.54-7. il.

**BODIES (Motor cars) Mechanical handling equipment**

- Automatic handling of skids for motor car bodies. K.

- Mumby. Mechanical Handling, 50 (May 63) p.236-44. il.

- Conveyor system. Mass Production, 39 (Mar 63) p.89-92. il.

- New car body conveyor system at Vauxhall. Machine Shop Magazine, 24 (Feb 63) p.71-3. il.

- New conveyor system to increase output [Vauxhall Motors, Luton] Machinery, 102 (6 Mar 63) p.524-6. il.



**BODIES (Motor cars) Mechanical handling equipment—cont.**

Press shop handling. H. G. Vallings. *Mechanical Handling*, 50 (Mar 63) p.124-9. il.

Vauxhall install new automatic conveyors. *Engineering*, 195 (25 Jan 63) p.154-5. il.

Vauxhall installs new conveyor system. G. W. King. *Motor Body*, 131 (Jan 63) p.30-2. il.

**BODIES (Motor cars) Paint**

Product development, by a specialist automotive paint manufacturer. *Paint J.*, 16 (Oct 63) p.455+

**BODIES (Motor cars) Paint, Acrylic**

Acrylics—the paint of the future manufactured today. G. Key. *Paint J.*, 16 (Oct 63) p.444+. il.

Changing trends for refinishers: application technique for acrylic paints. *Motor Body*, 132 (Sep 63) p.30-1

Putting on a shine at Luton: acrylic paint for Vauxhalls. E. Eves. *Autocar*, 119 (13 Dec 63) p.1140-2. il.

Vauxhall now using acrylics. *Product Finishing*, 16 (Oct 63) p.71+. il.

**BODIES (Motor cars) Paint, Priming, Water-thinned**

Production line painting the Ford Corsair [Aqualit] D. Hamilton. *Paint J.*, 16 (Oct 63) p.452-4. il.

**BODIES (Motor cars) Paint, Spraying**

Finishing Jaguar cars. *Product Finishing*, 16 (May 63) p.80+. il.

Humber place emphasis on finishing. *Product Finishing*, 16 (Jan 63) p.62-5. il.

**BODIES (Motor cars) Paint, Spraying, Electrostatic**

Rover "2000" body panels are electrostatically painted [Ransburg units] *Industrial Finishing*, 15 (Oct 63) p.31+. il.

Rover 2000 is 'finished painted' before assembly. *Product Finishing*, 16 (Nov 63) p.54+. il.

**BODIES (Motor cars) Painting**

Car finishing in Scotland: Hillman 'Imp' at Linwood and B.M.C. at Bathgate. *Product Finishing*, 16 (Aug 63) p.52-9. il.

Coachpainting. J. H. Ousbey. *Motor Body*, 131 (Mar 63) p.35-6

Common Market production lines no.6: Mercedes-Benz. *Paint J.*, 16 (May 63) p.18-21. il.

Daimler-Benz raise painting quality—and cut time 20%. J. R. Mikton. *Metalworking Production*, 107 (5 Jun 63) p.59-61. il.

Hillman "Imp" body painting plant. *Industrial Finishing*, 15 (Aug 63) p.19-23. il.

Material circulating system for Skoda Czechoslovakia. *Fluid Handling* (Sep 63) p.328-9. il.

Paint & the Bristol car. *Paint J.*, 15 (Jan 63) p.356-8. il.

Production line painting the Rolls Royce. R. Vaughan-Hennessy. *Motor Body*, 131 (Jul 63) p.12-16. il.

**BODIES (Motor cars) Panels, Forming, Expanding**

Expander-forming car body panels. D. Scott. *Metalworking Production*, 107 (10 Jul 63) p.49-51. il.

**BODIES (Motor cars) Plastics, Reinforced—Glass fibre**

Production of the Avanti body. *Motor Body*, 131 (Apr 63) p.22-5. il.

**BODIES (Motor cars) Repair**

Bodywork repairs to the Hillman Imp. *Motor Body*, 132 (Sep 63) p.22-3. il.

Ford Consul Classic 315. *Motor Body*, 131 (Jul 63) p.22-3

Modern bodywork repairing equipment. *Motor Body*, 131 (Mar 63) p.12-14. il.

Morris 1100 body repairs. *Motor Body*, 131 (May 63) p.18-19. il.

**BODIES (Motor cars) Repair, Painting**

Paint rectification after repairs. *Motor Body*, 131 (Mar 63) p.24-5

**BODIES (Motor cars) Repair, Stopping**

New stopper speeds repairs. *Motor Body*, 131 (Jun 63) p.28-9. il.

**BODIES (Motor cars) Strips, Steel, Prefinished**

Applications of prefinished metals. D. J. Fishlock: *Product Finishing*, 16 (Jan 63) p.55+. il.

**BODIES, Motor coaches**

British coach for Tripoli show. *Transport World* (Feb 63) p.47. il.

Industrial designer looks at coaches. N. Chapman. *Bus & Coach*, 35 (Aug 63) p.298-302. il.

Strachans and Austin co-operate. *Passenger Transport*, 126 (Mar 63) p.149-50. il.

**BODIES (Motor coaches) Buyers' guides**

Buyers' guide to coach bodywork: standardized touring coachwork available in Britain. *Commercial Motor*, 118 (4 Oct 63) p.84+. il.

**BODIES (Motor coaches) Maintenance**

Simple body repairs. P. M. A. Thomas. *Bus & Coach*, 35 (Aug 63) p.295+. il.

**BODIES (Motor coaches) Plastics, Reinforced—Glass fibre**

Reinforced plastics in road passenger transport. *Brit. Plastics*, 36 (Oct 63) p.554-7. il.

**BODIES, Motor vehicles**

Coaching review, pt.5: Harringtons of Hove. *Transport World* (Feb 63) p.35+. il.

**BODIES (Motor vehicles) Aluminium**

Aluminium and aluminium alloys. G. F. Moseley. *Motor Body*, 131 (Feb 63) p.36-7

**BODIES (Motor vehicles) Aluminium alloys**

Aluminium alloys for bodybuilding. G. F. Moseley. *Motor Body*, 132 (Aug 63) p.30-1

**BODIES (Motor vehicles) Demountable, Aluminium**

Demountable bodies save vehicle loading time. *Time & Motion Study*, 12 (Jul 63) p.39+. il.

**BODIES (Motor vehicles) De-waxing, Solvents, Pumps**

14-pump battery for vehicle dewaxing and washing. *Pumping*, 5 (Oct 63) p.566-7. il.

**BODIES (Motor vehicles) Insulation**

Insulated bodywork construction. *Motor Body*, 131 (Jun 63) p.18-19. il.

**BODIES (Motor vehicles) Maintenance**

Equipping a body repairing shop. S. F. Page. *Commercial Vehicles*, 37 (Mar 63) p.79+. il.

**BODIES (Motor vehicles) Manufactures**

Body engineering for production. W. S. Attwood. *Motor Body*, 132 (Aug 63) p.14-19. il.

**BODIES (Motor vehicles) Paint**

Colour for the motor industry. *Paint J.*, 15 (Feb 63) p.454-8. il.

Paint materials available. J. H. Ousbey. *Motor Body*, 131 (Apr 63) p.33-4

**BODIES (Motor vehicles) Paint, Spraying, Electrostatic**

Megastatron paint application. *Motor Body*, 131 (Mar 63) p.22

**BODIES (Motor vehicles) Painting**

Painting processes. J. H. Ousbey. *Motor Body*, 132 (Aug 63) p.31-2

Trad and vehicle painting. B. L. James. *Paint J.*, 16 (Oct 63) p.438-9. il.

**BODIES (Motor vehicles) Painting, Equipment**

Tools and equipment. J. H. Ousbey. *Motor Body*, 131 (May 63) p.35-6

**BODIES (Motor vehicles) Painting, Workshops, Heating**

Paintshop heating systems. J. H. Ousbey. *Motor Body*, 131 (Jan 63) p.14-15. il.

**BODIES (Motor vehicles) Painting, Workshops, Heating, Oil-fired, Warm air**

Heating for motor body spray shops [Wanson Thermobloc] *Industrial Finishing*, 15 (Feb 63) p.25-7. il.

Two Thermobloc units aid paint spraying and aluminium storage at Arlington Motor Company, Ltd. *Oil Firing*, 5 (Jan 63) p.32-3. il.

**BODIES (Motor vehicles) Panels, Pressworking**

Influence of modern tooling on body design (Summary) L. W. James & D. W. Allsop. *Automotive Body Engng.*, 132 (Nov 63) p.26-9. il.

**BODIES (Motor vehicles) Particle boards**

Particle board for automotive bodywork. *Automotive Body Engng.*, 132 (Nov 63) p.20-1. il.

**BODIES (Motor vehicles) Plastics, Reinforced**

Plastics design and production techniques (extracts) A. C. Hill. *Motor Body*, 131 (May 63) p.24-7

Reinforced plastics as a material for motor bodywork. A.C. Hill. *Reinforced Plastics*, 8 (Nov 63) p.83-6. il.

**BODIES (Motor vehicles) Plastics, Reinforced—Glass fibre**

Economics of GRP in automotive bodies (summary) H. H. Chapman. *Plastics*, 28 (Apr 63) p.139-41. il.

Economics of reinforced plastics for vehicle bodywork. H. H. Chapman. *Motor Body*, 132 (Aug 63) p.20-2. il.

Reinforced plastics can save money for manufacturers. S. N. Loud. *Automotive Body Engng.*, 132 (Nov 63) p.24-5. il.

**BODIES (Motor vehicles) Plywood**

New plywood developments in vehicle building. *Motor Body*, 131 (Feb 63) p.20-4. il.

Plywood makes a come-back in the motor trade. S. F. Page. *Woodworking Industry*, 20 (Jun 63) p.319-20. il.

**BODIES (Motor vehicles) Steel, Repairs, Plastics**

New plastic repair technique [Acrlulite] *Motor Body*, 131 (Jan 63) p.24-5. il.

**BODIES (Motor vehicles) Washing, Pumps**

14-pump battery for vehicle dewaxing and washing. *Pumping*, 5 (Oct 63) p.566-7. il.

**BODIES (Motor vehicles) Wood**

Contribution of wood products to vehicle building. *Motor Body*, 131 (Feb 63) p.12-16. il.

Wood is returning to favour as a body material. S. F. Page. *Commercial Vehicles*, 37 (Nov 63) p.62+. il.

**BODIES, Refrigerated motor vehicles. See MOTOR**

**VEHICLES, Refrigerated, Bodies**

**BODIES, Semi-trailers, Articulated motor vehicles. See**

**MOTOR VEHICLES, Articulated, Semi-trailers, Bodies**

**BODIES, Tree lopping vehicles. See TREES, Lopping, Vehicles, Bodies****BODIES, Vans**

Matching the body to the job. *Commercial Motor*, 117 (26 Jul 63) p.58-9. il.

**BODIES (Vans) Aluminium alloys**

Getting value for money from alloy van bodies. S. F. Page. *Commercial Vehicles*, 35 (Oct 63) p.134+. il.

**BODIES (Vans) Paint**

Livery colours for commercial transport. R. Vaughan-Hennessy. *Paint J.*, 15 (Dec 62) p.278-80. il.

**BODY CENTRED CUBIC METALS. See METALS, Body centred cubic****BOEING 727 AIRCRAFT. See AIRCRAFT, Types, Boeing 727****BOGIES, Diesel locomotives. See LOCOMOTIVES, Diesel, Bogies****BOGIES (Locomotives) Standardisation**

Rational standardisation of locomotive bogies. J. L. Koffman. *Railway Gaz.*, 117 (21 Dec 62) p.707-10. il. refs.

**BOGIES, Railways, Rolling stock. See ROLLING STOCK, (Railways) Bogies****BOGNOR REGIS**

See Housing, Old people, Bognor Regis

**BOILER HOUSES**

Boiler houses—four examples. D. Stephen. *Architects' J.*, 138 (30 Oct 63) p.917-26. il.

Plant spaces: boiler rooms and boiler houses. *Architects' J.*, 138 (23 Oct 63) information sheet 1219 (1-3) il.

**BOILER HOUSES, Central heating, Terminal buildings, Airports. See AIRPORTS, Terminal buildings, Heating, Central, Boiler houses**

**BOILER HOUSES, District heating. See DISTRICT HEATING, Boiler houses**

**BOILER ROOMS**

Plant spaces: boiler rooms and boiler houses. *Architects' J.*, 138 (23 Oct 63) information sheet 1219 (1-3) il.

**BOILERS**

Boilers today. *Fuel Efficiency*, 11 (Oct 63) p.23+. il.

C.E.A. Conference: Shell and water-tube boilers and air heaters (extracts) C. A. Roost, S. D. Shirley & E.

Chatworthy. *Fuel Efficiency*, 11 (Jan 63) p.48-50. il.

**BOILERS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Education**Problems*

*Corrosion*

*Scale*

*Flue dust*

*Blowdown*

*Heat loss*

*Technical operations*

*Cleaning*

*Soot blowing*

*Feed materials*

*Fuels*

*Coal*

*Feedwater*

*Constructional materials*

*Thermal insulation*

*Refractories*

*Chromium—Nickel*

*Parts & Ancillaries*

*Plates*

*Tubes*

*Furnaces*

*Chimneys*

*Grit arrestors*

*Control systems*

*Plant*

*Air preheaters*

*Instruments*

*Kinds by fuel*

*Gas fired*

*Oil fired*

*Coal fired*

*Coal slurry fired*

*Peat fired*

*Kinds by structure*

*Vertical*

*Packaged*

*Fire tube*

*Economic*

*Water tube*

*Kinds by mode of working*

*Once through*

*Flash*

*Applications*

*Power stations*

**BOILERS—SUBHEADINGS—Synopsis—cont.**

Power stations—cont

Nuclear power stations

Ships

Chemical plant

Dyehouses

Laundries

**BOILERS, Air preheaters, Tubes, Glass**Glass tubes for boiler air heaters. *Steam Engr.*, 32 (Mar 63) p.183-6. il.**BOILERS, Blowdown**Control of blowdown in shell and water-tube boilers. *P. Crumley. Engng. & Boiler House Rev.*, 78 (Sep 63) p.326-7. il.**BOILERS, Carpet manufactures.** See **CARPETS, Manufactures, Boilers****BOILERS, Central heating, Buildings.** See **BUILDINGS, Heating, Central, Boilers****BOILERS, Chemical plant**Boiler plant for chemical works. *Engineer*, 216 (26 Jul 63) p.124-6. il.**BOILERS, Chimneys, Polyester—Glass fibre**Tallest boiler house chimney in reinforced plastic [Graydons Industrial & Marine Plastics] *Engng. & Boiler House Rev.*, 78 (Oct 63) p.368-9. il.**BOILERS, Chromium—Nickel, Corrosion**Corrosion of nickel-base material in gas-turbine and boiler atmospheres. E. J. Bradbury, P. Hancock & H. Lewis. *Metallurgia*, 67 (Jan 63) p.3-14. il. refs.**BOILERS, Cleaning, Chemical**Chemical cleaning of new drum type and once through high pressure boilers. N. Ranchev. *Machinery Lloyd (Overseas ed.)* 35 (21 Dec 63) p.36-8**BOILERS, Coal, Pulverised, Ash, Disposal**Pulverised—fuel ash disposal. S. H. Dawson & W. H. Dunkley. *Proc. of Instn. of Mechanical Engrs.*, 176 no.19 (1962) p.449-69. il.**BOILERS, Coal, Pulverised, Ash, Precipitation, Electrostatic**Efficiency of electrostatic precipitators as affected by the properties and combustion of coal. H. G. T. Busby & K. Darby. *J. of Inst. of Fuel*, 36 (May 63) p.184-97. il. refs.**BOILERS, Coal-fired**High efficiency, smokeless, coal-fired boiler [Stempo] *Power & Works Engng.*, 58 (Jun 63) p.26-7. il.Modern solid fuel steam-raising installation at Universal Metal Products' Salford plant. *Packaging*, 34 (Aug 63) p.38-9. il.New boilers with smokeless combustion process [Roberts "Stempo"] *Fuel Efficiency*, 11 (May 63) p.34-6. il.Smokeless coal-fired boilers [Roberts "Stempo"] *Engineer*, 215 (5 Apr 63) p.632. il.**BOILERS, Coal-fired, Ash, Handling**Ash handling in industrial boiler houses. P. Brennan. *Power & Works Engng.*, 58 (May 63) p.18-23. il.**BOILERS, Coal fired, Ash, Slurries, Pipes, Linings, Rubber**Tests prove superiority of rubber-lined pipe in handling abrasive slurry. *Rubber Developments*, 16 no.1 (1963) p.19. il.**BOILERS, Coal-fired, Cleaning, Shot-blasting**Shot cleaning boilers. *Fuel Efficiency*, 11 (Jun 63) p.36. il.**BOILERS, Coal-fired, Flue dust, Precipitators, Electrostatic**Rate of dust emission from a precipitator: effect of changes in the ash content. C. J. Crawshaw. *Engineer*, 215 (28 Jun 63) p.1149-54. il.**BOILERS, Coal fired, Heating, Factories.** See **FACTORIES, Heating, Boilers, Coal fired****BOILERS, Coal-fired, Potteries, China.** See **CHINA, Potteries, Boilers, Coal-fired****BOILERS, Coal-fired, Stoking, Mechanical**Coal and ash-handling for small boiler plant. J. R. Clarke. *Engng. & Boiler House Rev.*, 78 (Apr 63) p.120-7. il.

Coal handling in industrial boiler houses. P. Brennan.

*Power & Works Engng.*, 58 (Apr 63) p.44-9. il.Some experiments and developments towards improved coal and ash handling for small boiler plant. M. Harris, W. L. Rivett & G. G. Thurston. *J. of Inst. of Fuel*, 35 (Dec 62) p.523-31. il. refs.**BOILERS, Coal-fired, Stoking, Mechanical, Equipment, Aluminium**Aluminium in coal-handling equipment. R. M. Hay. *Engng. & Boiler House Rev.*, 78 (Jul 63) p.258-60. il.**BOILERS, Coal slurry fired**Burning washery slurry for steam raising. *Power & Works Engng.*, 58 (Dec 63) p.16-21. il.**BOILERS, Control systems**Automatic combustion control and boiler efficiency. A. F. Webber. *Power & Works Engng.*, 57 (Dec 62) p.30-7. il.Automatic control of steam raising boilers, pt.2: additional safeguards for installations that operate without regular supervision. V. S. W. Smyth. *Oil Firing*, 5 (Jan 63) p.23-5. il.**BOILERS, Control systems, Short cycling**Short-cycling of automatic boilers and the remedies. G. C. Pearce. *Oil Firing*, 5 (Dec 62) p.19+**BOILERS, Corrosion**Corrosion and its control, pt.1. (abstracts) J. F. Wilkes. *Steam Engr.*, 32 (Aug 63) p.363-6Corrosion and its control, pt.2 (abstracts) J. F. Wilkes. *Steam Engr.*, 32 (Sep 63) p.413-14**BOILERS (Dyehouses) Coal, Pulverised**P.f. firing in a dyeworks boiler house. *Power & Works Engng.*, 58 (Jul 63) p.50-4. il.**BOILERS (Dyehouses) Economic, Coal-fired**Economical steam raising at a Midlands dyeworks [Abbey Meadow Mills, Leicester] *Power & Works Engng.*, 58 (Nov 63) p.6-12. il.**BOILERS, Economic, Coal fired**Central boiler plant serves three chemical factories [B.I.P. Chemicals] *Engng. & Boiler House Rev.*, 78 (Sep 63) p.316-21. il.Centralised boiler plant for B.I.P. Chemicals. *Steam Engr.*, 32 (Sep 63) p.403-11. il.Modern works boilerhouse [B.I.P. Chemicals] *Power & Works Engng.*, 58 (Sep 63) p.66-71. il.New B.I.P. plant, from the designers' point of view. M. J. How. *Fuel Efficiency*, 11 (Oct 63) p.43-6. il.One boiler house serves three factories [BIP Chemicals Ltd., Oldbury works] *Engineering*, 196 (16 Aug 63) p.214-15. il.**BOILERS, Economic, Coal-fired, Control systems**Tests on an automatically controlled chain-grate-fired shell boiler. T. J. K. Rolfe. *J. of Inst. of Fuel*, 35 (Dec 62) p.532-50. il. refs.**BOILERS, Economic, Coal-fired, Deposits, Fireside**Deposits in coal-fired economic boilers. B. Boulton & J. J. Taylor. *J. of Inst. of Fuel*, 36 (Nov 63) p.463-77. il.**BOILERS, Economic, Oil-fired, Heating, Hospitals.** See **HOSPITALS, Heating, Boilers, Economic, Oil-fired****BOILERS, Education**Familiarisation school: the problem of training [Powmaster Familiarisation School, G.W.B. Furnaces, Limited] *Oil Firing*, 6 (Oct 63) p.20-1. il.Operator training and after service. *Fuel Efficiency*, 11 (May 63) p.32-3. il.Powmaster Familiarization School. *Heating & Air Conditioning*, 31 (Sep 63) p.209. il.Powmaster Familiarisation School. *Heating & Ventilating Engr.*, 37 (Sep 63) p.146. il.



**BOILERS, Feedwater**

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**BRIDGES**

Related Headings:

FLYOVERS  
ROADS, Elevated  
VIADUCTS



**BRIDGES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Problems  
Corrosion

Technical operations  
Testing  
Lighting

Materials  
Concrete  
Steel

Parts  
Beams  
Slabs  
Girders  
Decks  
Bearings  
Roadways  
Abutments  
Falsework  
Wing walls

Kinds of bridge by form  
Box girder  
Suspension  
Glass curtained

Kinds of bridge by function  
Motorways  
Pipelines  
Military engineering

**BRIDGES, Abutments, Settlement**

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Pipelines, Bridges, Aluminium

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- BRIDGES, Pipelines, Town gas.** See **GAS (Town) Pipelines, Bridges**
- BRIDGES, Pneumatic, Hygrometers.** See **HYGROMETERS, Pneumatic bridge**
- BRIDGES, Railways.** See **RAILWAYS, Bridges**
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- BRIDGES, Electrical, Ratio-arm, Transformers, Platinum resistance thermometers.** See **THERMOMETERS, Resistance, Platinum, Bridges, Ratio-arm, Transformers**
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- BRIDGES, Electrical, Silicon controlled rectifiers, Speed changers, D.C. motors, Machine tools.** See **MACHINE TOOLS, Electric motors, D.C., Speed changers, Rectifiers, Silicon controlled, Bridge**
- BRIDGES, Electrical, Thermostats.** See **THERMOSTATS, Bridge**
- BRIDGES, Electrical, Wheatstone, Resistivity measurement, Zinc point.** See **PAINT, Zinc, Resistivity, Measurement, Wheatstone bridge**
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- BRIGHTENING AGENTS, Optical.** See **DYES, Fluorescent**
- BRIGHTLING**  
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- BRIGHTON COLLEGE OF TECHNOLOGY, Architecture**  
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- BRILLOUIN ELECTRON BEAMS.** See **ELECTRON BEAMS, Brillouin**



**BRINE**, Chlorine production. See **CHLORINE**, Production, Brine

**BRINE**, Snow clearance, Roads. See **ROADS**, Snow clearance, Brine

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**BRIQUETTING**, Coal. See **COAL**, Briquetting

**BRIQUETTING**, Graphite, Nuclear reactors. See **NUCLEAR REACTORS**, Graphite, Briquetting

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**BRITTLE FRACTURE**. See **FRACTURE**, Brittle

**BRITTLE FRACTURE**, Cast nickel-chromium-iron. See **IRON-CHROMIUM-NICKEL**, Cast, Brittle fracture

**BRITTLE FRACTURE**, Liquefiers, Carbon dioxide. See **CARBON DIOXIDE**, Liquefiers, Brittle fracture

**BRITTLE FRACTURE**, Metals. See **METALS**, Brittle fracture

**BRITTLE FRACTURE**, Mild steel plates. See **PLATES**, Steel, Mild, Fracture, Brittle



**BRITTLE FRACTURE, Nickel-Molybdenum-Chromium-Steel.**

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**BRITTLINESS, Effect on friction, Abrasion, Bismuth.** See

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**VEHICLES.** See **MOTOR VEHICLES**, Articulated, Types,

Austin FF K360-Brockhouse KS 1282

**2-BROMO-2-CHLORO-1,1,1-TRIFLUOROETHANE.** See **HALOTHANE**

**BROMOMETHANE.** See **METHYL BROMIDE**

**BRONZE**

Related Headings:

**GUNMETAL**

**BRONZE, Bearings.** See **BEARINGS**, Bronze

**BRONZE, Bearings, Electric motors.** See **ELECTRIC**

**MOTORS**, Bearings, Bronze

**BRONZE, Billets.** See **BILLETS**, Bronze

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**BRONZE ALUMINIUM.** See **ALUMINIUM BRONZE**

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**BROUSSARD AIRCRAFT.** See **AIRCRAFT**, Types, Nord-Aviation Super Broussard

**BROWN COAL, Bitumen production.** See **BITUMEN**, Production, Brown coal

**BROWNING, Enzymic, Potatoes.** See **POTATOES**, Browning, Enzymic

**BROWNING, Molasses.** See **MOLASSES**, Browning

**BROWNING, Non-enzymatic, Sugars.** See **SUGARS**, Browning, Non-enzymatic

**BROWNING, Sugar-Amines.** See **SUGAR-AMINES**, Browning

**BROWNING, Sugars.** See **SUGARS**, Browning

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J. H. Skellon. Department of Biology. J. D. Gillet.

Department of Mathematics. J. Crank. Department of

Physics. C. A. Hogarth. Department of Mechanical

Engineering. G. C. Shipp. Department of Electrical

Engineering and Electronics. R. T. A. Howell. Depart-

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**BRUSHES, Carbon, Commutation, D.C. machines.** See **D.C.**, Machines, Commutation, Brush-Commutator interface

**BRUSHES, Carbon, Current, Effect on d.c. generators.** See

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Cleansing, Vehicles, Brushes

**BRUSHLESS SYNCHRONOUS MOTORS.** See **ELECTRIC**

**MOTORS**, Synchronous, Brushless

**BUBBLE-CAP COLUMNS, Distillation.** See **DISTILLATION**, Columns, Bubble-cap

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**BUBBLE GUNS, Destratification, Water.** See **WATER**, Destratification, Bubble guns

**BUBBLES, Air, Effect on nucleation, Calcium sulphate solution, Scale, Metal surface, Heat transfer.** See **HEAT**, Transfer, Metal surface, Scale, Calcium sulphate, Solution, Nucleation, Effect of air bubbles

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**BUBBLES, Rising, Velocity**

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See

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PAPERMAKING, Buckinghamshire

**BUCKLING, Bars, Variable rigidity. See BARS, Variable rigidity, Buckling****BUCKLING, Longitudinally stiffened flat panels. See PANELS, Flat, Stiffened, Longitudinally, Buckling****BUCKLING, Rectangular plates. See PLATES, Rectangular, Buckling****BUCKLING, Restrained edge strips. See STRIPS (Restrained edges) Buckling****BUCKLING, Rigid frames, Structures. See STRUCTURES, Frames, Rigid, Buckling****BUCKLING, Thin walled cylinders. See CYLINDERS, Thin walled, Buckling****BUFFALO (S. Africa)**

See

FLUORSPAR, Quarrying, Buffalo (S. Africa)

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**BUILDING**

Related Headings:

ADHESIVES, Building materials  
AIR CONDITIONING  
ALUMINIUM, Building materials  
ARCHITECTURE  
BATHROOMS  
BOILER ROOMS  
BRICKS, Building materials  
CANOPIES  
CEILINGS  
CELLARS  
CERAMICS, Building materials  
CLOAKROOMS  
CONCRETE, Building materials  
CONCRETING  
DAMP-PROOF COURSES  
DOORS  
FIBRE BOARD, Building materials  
FLOORS  
GLASS, Building materials  
GLASS, Plate, Building materials  
JOINERY  
KITCHENS  
LAVATORIES  
LOUVRES  
MASONRY  
MODULAR CO-ORDINATION  
P.V.C., Building materials  
PARTITIONS  
PLASTER  
PLASTERING

**BUILDING**Related Headings—*cont.*

PLASTICS, Building materials  
 PLASTICS, Expanded, Building materials  
 PLASTICS, Reinforced, Building materials  
 PLASTICS, Reinforced—Glass fibre, Building materials  
 PLUMBING  
 PLYWOOD, Building materials  
 POLYSTYRENE, Expanded, Building materials  
 QUANTITY SURVEYING  
 READING ROOMS  
 ROOFLIGHTS  
 ROOFS  
 SCAFFOLD BOARDS  
 SCAFFOLDING  
 SEALANTS, Building materials  
 SEALANTS, Polyurethane, Expanded, Building materials  
 SEALANTS, Rubberised, Building materials  
 SKYLIGHTS  
 STAIRCASES  
 STRUCTURES  
 STUDY-BEDROOMS  
 VENTILATION  
 VINYL POLYMERS, Building materials  
 WINDOWS  
 WOOD, Building materials

**BUILDING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## Special localities

Great Britain  
     Birmingham  
 Netherlands  
 Russia

## Regulations

## Costs

*Bill of quantities*

## Contracts

*Forms of contract*  
*Forms of sub-contract*

## Contractors

## Education

## Research

## Information services

## Technical assessment certificates

## Problems

*Defects*  
*Weather protection*  
*Industrial safety*

## Sites

## Materials

*Stone*

## Equipment

*Computers*

## Technical operations

*Planning*  
*Critical path analysis*  
*Scheduling*  
*Work study*  
*Mechanisation*

**BUILDING—SUBHEADINGS—Synopsis—cont.**

## Communications

*Mechanical handling*

## Building under special conditions

*Winter*

## Building systems

*Lift shape construction***BUILDING, Apprenticeship**

Apprenticeship and the site manager (extracts) Builder, 205 (22 Nov 63) p.1091-2

**BUILDING, Bill of Quantities**

Re-thinking on bills of quantities. Contract J., 192 (14 Mar 63) p.211-12

**BUILDING, Bill of Quantities, Operational methods**

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**BUILDING, Birmingham**

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**BUILDING, Contracts, Procedure, Parallel working**

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**BUILDING, Costs**

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**BUILDINGS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following*

**Problems**

*Damage  
 Fires  
 Frost damage  
 Failure  
 Wind pressure  
 Pests  
 Town planning*

**Properties**

*External circulation  
 Internal circulation  
 Acoustics*

**Technical activities**

*Measurement  
 Maintenance  
 Preservation  
 Protection  
 Restoration  
 Cleaning*



## BUILDINGS—SUBHEADINGS—Synopsis—cont.

- Drilling
- Insulation
- Rendering
- Tiling
- Painting
- Paint
- Parts
  - Joints
  - Seals
  - Beams
  - Panels
  - Foundations
  - Steelwork
  - Walls
  - Cladding
  - Partitions
  - Rooms
  - Reception areas
  - Storage facilities
  - Components
  - Fittings
- Services
  - Heating
  - Water
- Kinds
  - Temporary
  - Demountable
  - Tall
  - Round
  - Wood
  - Concrete
  - Prefabricated
  - Suspension construction
- Buildings for special occupants
- Disabled persons

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Furniture, Built in

**BUILT IN WARDROBES. See WARDROBES, Built in****BULGARIA**

See

- ESSENTIAL OILS, Bulgaria
- LEAD, Mining, Bulgaria
- PETROLEUM, Production, Bulgaria
- TRAMCARS, Sofia
- TRAMWAYS, Sofia
- ZINC, Mining, Bulgaria
- BULGE FORMING, Booster components, Vehicles, Astronautics. See ASTRONAUTICS, Vehicles, Boosters, Components, Bulge forming
- BULK COLLECTION, Milk. See MILK, Bulk collection
- BULK HANDLING, Animal feedingstuffs. See ANIMAL FEEDINGSTUFFS, Bulk handling
- BULK HANDLING, Cargoes. See CARGOES, Bulk handling
- BULK HANDLING, Cement. See CEMENT, Bulk handling
- BULK HANDLING, Coal. See COAL, Bulk handling
- BULK HANDLING, Commercial vehicles. See VEHICLES, Commercial, Bulk handling
- BULK HANDLING, Disposal, Refuse. See REFUSE, Disposal, Bulk handling
- BULK HANDLING, Effect on drying, White sugar. See SUGAR, White, Drying, Effect of bulk handling
- BULK HANDLING, Fertilisers. See FERTILISERS, Bulk handling
- BULK HANDLING, Flour. See FLOUR, Bulk handling
- BULK HANDLING, Grain. See GRAIN, Bulk handling
- BULK HANDLING, Iron ores. See IRON, Ores, Bulk handling
- BULK HANDLING, Lubricating greases. See LUBRICATING GREASES, Bulk handling
- BULK HANDLING, Plastics. See PLASTICS, Bulk handling
- BULK HANDLING, Raw materials, Cake. See CAKE, Raw materials, Bulk handling
- BULK HANDLING, Raw sugar. See SUGAR, Raw, Bulk handling
- BULK HANDLING, Road transport, Animal feedingstuffs. See ANIMAL FEEDINGSTUFFS, Road transport, Bulk handling
- BULK HANDLING, Shortenings. See SHORTENINGS, Bulk handling
- BULK HANDLING, Shortenings, Biscuits manufactures. See BISCUITS, Manufactures, Shortenings, Bulk handling
- BULK HANDLING, Shortenings, Cake manufactures. See CAKE, Manufacture, Shortenings, Bulk handling
- BULKED NYLON, Knitting yarns. See KNITTING, Yarns, Nylon
- BULKED TRICEL, Yarns, Knitting. See KNITTING, Yarns, Tricel, Bulk
- BULKED YARNS. See YARNS, Bulk

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BURNERS, Low pressure, Oil-fired boilers, Heating, Houses. See HOUSES, Heating, Boilers, Oil-fired, Burners, Low pressure

BURNERS, Oil-fired, Arc furnaces, Steel production. See STEEL, Production, Furnaces, Arc, Burners, Fuel oil

BURNERS, Oil-fired, Heating, Buildings. See BUILDINGS, Heating, Oil-fired, Burners

BURNERS, Oil-fired, Openhearth furnaces. See FURNACES, Openhearth, Oil-fired, Burners

BURNERS, Oil-fired boilers. See BOILERS, Oil-fired, Burners

BURNERS, Oil-fired boilers, Electroplating. See ELECTROPLATING, Boilers, Oil-fired, Burners

BURNERS, Open hearth furnaces. See FURNACES, Openhearth, Burners

BURNERS, Pressure jet, Oil-fired fire-tube boilers. See BOILERS, Fire-tube, Oil-fired, Burners, Pressure jet

BURNERS, Sulphur, Sulphur dioxide production. See SULPHUR DIOXIDE, Production, Sulphur, Burners

BURNERS, Town gas. See GAS (Town) Burners

BURNING, Steel. See STEEL, Burning

**BURNISHING**

Related Headings:  
 DIAMOND BURNISHING

BURNISHING, Roller, Bronze bearings, Electric motors. See ELECTRIC MOTORS, Bearings, Bronze, Burnishing, Roller

BURNISHING, Stainless steel, Weights, Laboratory apparatus.

See WEIGHTS, Laboratory apparatus, Steel, Stainless, Burnishing

**BURNLEY**

See TOWN PLANNING, Burnley

**BURNTISLAND**

See SHIPYARDS, Burntisland

BURST TESTING, Plastic pipes. See PIPES, Plastics, Burst testing

**BURSTING DISCS**

- Bursting disc survey. J. E. Philpott. Engng. Materials & Design, 6 (Jan 63) p.24-9. il.

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BUS SERVICES, New towns. See NEW TOWNS, Bus services

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 March of progress in p.s.v. design. P. M. A. Thomas. Bus & Coach, 35 (Nov 63) p.416-18. il.

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- 1927 Leyland Lion single-decker: off-beat road test. B. Currie. *Motor Cycle*, 111 (19 Dec 63) p.736-8. il.
- Vehicle standardisation pays. P. M. A. Thomas. *Bus & Coach*, 35 (May 63) p.156-9. il.
- Versatile Albions for Wallasey. *Transport World* (Dec 62) p.27. il.
- What a 94-seater would mean. N. Morton. *Bus & Coach*, 35 (May 63) p.186-9. il.

**USES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

**Particular localities**

- Austria
- Vienna
- Japan

**Problems**

- Corrosion*

**Technical activities**

- Design*
- Interior design*
- Maintenance*
- Cleaning*
- Replacement*
- Driving*

**Parts**

- Structures*
- Chassis*
- Bodies*
- Diesel engines*
- Suspensions*
- Transmissions*
- Air conditioning*

**Performance****Kinds**

- Rural*

**Ancillaries**

- Luggage carrying facilities*
- Garages*
- Stations*

**Transport****BUSES, Bodies, Varnishes, Spraying, Hot**

- Frequent varnishing cuts out repainting. M. Clements. *Bus & Coach*, 35 (Mar 63) p.109. il.

**BUSES, Chassis**

- 36 ft. A.E.C. Reliance 590. J. H. Fielder. *Transport World* (Dec 62) p.33-4. il.
- Viking has appeal. J. F. Moon. *Commercial Motor*, 118 (8 Nov 63) p.109-12. il.
- Viking name revived by Albion. P. M. A. Thomas. *Bus & Coach*, 35 (Nov 63) p.428-9. il.

**BUSES, Cleaning**

- Cleaning equipment and materials. *Bus & Coach*, 35 (Apr 63) p.133-45. il.

**BUSES, Corrosion**

- London's non-corroding transport. *Corrosion Prevention & Control*, 9 (Dec 62) p.23+. il.

**BUSES, Design**

- Prototype for a new fleet. J. N. Keynes. *Bus & Coach*, 35 (Feb 63) p.52-4. il.

**BUSES, Diesel engines**

- Perkins kit gives new life to old U.S. buses. Public Cleansing, 53 (Jan 63) p.30-1
- Thoughts on future trends in engine design. S. C. Vince. *Transport J.*, 20 (May 63) p.438+. il.

**BUSES, Driving, Right hand drive**

- Changing to right-hand road movements. *Bus & Coach*, 35 (Jan 63) p.1

**BUSES, Fares, Collection, Machines**

- Fare collection and ticket-issuing machines. L. C. Harrison. *Bus & Coach*, 35 (May 63) p.174-9. il.
- No conductor needed! [HolsTlMatic] Passenger Transport, 126 (May 63) p.274. il. ref.

**BUSES, Garages**

- Architecture in the bus and coach industry. H. A. F. Spooner. *Transport World* (May 63) p.39+
- Architecture in the bus and coach industry (extracts) H. A. F. Spooner. *Passenger Transport*, 126 (Jun 63) p.334+. il.
- Centralized vehicle maintenance at new Luton garage. W. M. Little. *Transport J.*, 21 (Sep 63) p.270-1. il.
- Edinburgh's first new garage. *Transport World* (Jan 63) p.22-3. il.
- Gillmoss—Liverpool plans for expansion. *Passenger Transport*, 126 (Jan 63) p.17+. il.
- London Transport's £1 million garage modernization plan. *Transport J.*, 20 (8 Mar 63) p.284+. il.
- Luton's centralised transport depot. *Transport World* (Sep 63) p.19-21. il.
- Marine Garage Portobello—designed for operational economy. *Passenger Transport*, 126 (Feb 63) p.84-5. il.
- New Cheadle depot for Potteries Motor Traction. *Transport J.*, 20 (8 Feb 63) p.137. il.
- Seaside garage. *Bus & Coach*, 35 (Jan 63) p.16-17. il. ref.
- Sheffield and Merthyr open depots. *Bus & Coach*, 35 (Aug 63) p.282-4. il.
- Vienna's latest depot. *Bus & Coach*, 35 (May 63) p.183-5. il.

**BUSES, Interior design**

- Passenger comfort: decor. *Bus & Coach*, 35 (Jun 63) p.220-2. il.

**BUSES, Japan**

- Japan's bus industry is growing fast. H. Mundy. *Bus & Coach*, 35 (Mar 63) p.96-9. il.

**BUSES, Luggage carrying facilities**

- Carrying passengers' luggage. P. M. A. Thomas. *Bus & Coach*, 35 (Jun 63) p.198-9

**BUSES, Maintenance**

- Maintenance of a 469-vehicle fleet. R. A. Lovell. *Bus & Coach*, 35 (20 Nov 63) p.452-6. il.
- Should rolling stock be reconditioned or replaced? (summary) J. Meyer. *Passenger Transport*, 126 (Jul 63) p.388

**BUSES, Air conditioning**

- Passenger comfort: air conditioning. *Bus & Coach*, 35 (Jun 63) p.223-7. il.

**BUSES, Bodies**

- Changing scene in bodybuilding. W. Lambden. *Bus & Coach*, 35 (Aug 63) p.292-4. il.

**BUSES, Bodies, Maintenance**

- Simple body repairs. P. M. A. Thomas. *Bus & Coach*, 35 (Aug 63) p.295+. il.

**BUSES, Bodies, Plastics, Reinforced—Glass fibre**

- Reinforced plastics in road passenger transport. *Brit Plastics*, 36 (Oct 63) p.554-7. il.

**BUSES, Bodies, Standardisation**

- Standardisation of motor buses: reports to the international union indicate wide variations between European countries. *Passenger Transport*, 126 (Sep 63) p.498-9

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- All-steel bus body for Montevideo. *Motor Body*, 131 (Jan 63) p.22-3. il.

**BUSES, Maintenance, Depots**

Five-pit workshop for 80 vehicles. *Bus & Coach*, 35 (Mar 63) p.83-5. il.

**BUSES, Performance**

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**BUSES, Replacement**

When to sell and how. P. Cawston. *Bus & Coach*, 35 (Sep 63) p.344-5. il.

**BUSES, Rural, Transport**

How to make country buses pay. P. A. C. Brockington. *Commercial Motor*, 117 (19 Jul 63) p.52-4. il.

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**BUSES, Stations, Aberdeen**

Bus station fronts railway station. *Bus & Coach*, 35 (Sep 63) p.348-50. il.

**BUSES, Stations, Birmingham**

Midland Red's Birmingham station. *Bus & Coach*, 35 (Nov 63) p.404-5. il.

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George Washington Bridge bus terminal, New York. *Concrete Q.* (Jan/Mar 63) p.26-8. il.

Nervi in New York. *Industrial Architecture*, 6 (Sep 63) p.641-3. il.

P.S.V. operators now well catered for in New York's new station. *Transport J.*, 20 (8 Mar 63) p.254+. il.

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Integral construction saves 1,000 lb. [Verheul buses and coaches] P. A. C. Brockington. *Commercial Motor*, 117 (15 Feb 63) p.62-3. il.

Let's look again at integral construction. J. M. Dickson-Simpson. *Bus & Coach*, 35 (Aug 63) p.303-7. il.

**BUSES, Suspensions**

Suspension dominates passenger comfort. G. H. Tidbury. *Bus & Coach*, 35 (Jul 63) p.260-4. il.

**BUSES, Transmissions**

Automatic choice. A. A. Townsin. *Commercial Motor*, 117 (5 Jul 63) p.62-4. il.

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More comfort must be the bus industry's aim; earlier replacement of vehicles could improve the public's image of road transport. H. Hodge. *Bus & Coach*, 35 (Mar 63) p.80-2. il.

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Still more operators, still more p.s.v.s. W. Lambden. *Bus & Coach*, 35 (Sep 63) p.323-6. il. ref.

**BUSES, Transport, Bicycles.** See **BICYCLES, Transport, Buses****BUSES, Transport, Bolton**

Bright future assured for Bolton corporation transport. *Transport J.*, 20 (8 Mar 63) p.230-2. il.

**BUSES, Transport, Canada**

Improving the public image. A. H. Farebrother. *Bus & Coach*, 35 (Jul 63) p.257-9. il.

**BUSES, Transport, Cheshire**

Passenger transport development in the Lower Tame Valley. *Transport J.*, 20 (11 Jan 63) p.34-6. il.

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First six years of amalgamation. M. Clements. *Bus & Coach*, 35 (Oct 63) p.384-8. il.

**BUSES, Transport, Conversion from trolley-bus transport, London**

London trolley-bus conversion scheme. F. J. Lloyd. *Bus & Coach*, 35 (Feb 63) p.40-9. il.

**BUSES, Transport, East Riding**

Value of co-ordination in Yorkshire's East Riding. G. D. Jewell. *Transport J.*, 20 (8 Feb 63) p.166+. il.

**BUSES, Transport, Eastbourne**

Diamond Jubilee of first municipal bus operator. *Transport J.*, 20 (May 63) p.426-7. il.

Sixty years of municipal buses. J. W. Taylor. *Transport World* (May 63) p.35-6. il.

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**BUSES, Transport, Grimsby**

First six years of amalgamation. M. Clements. *Bus & Coach*, 35 (Oct 63) p.384-8. il.

**BUSES, Transport, Hertfordshire**

North-East Hertfordshire. A. Mann. *Passenger Transport*, 126 (Dec 63) p.658+. il.

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- CALCIUM CARBONATE**, Activated, Fillers, Rubber. See RUBBER, Fillers, Activated calcium carbonates
- CALCIUM CARBONATE—ALUMINA—SILICA**, Glass. See GLASS, Alumina—Calcium carbonate—Silica
- CALCIUM CHLORIDE**, Corrosion, Pretensioned tendons, Prestressed concrete. See CONCRETE, Prestressed, Tendons, Pretensioned, Corrosion, Calcium chloride
- CALCIUM CHLORIDE**, Corrosion, Reinforcement, Reinforced concrete. See CONCRETE, Reinforced, Reinforcement, Corrosion, Calcium chloride
- CALCIUM CHLORIDE**, Dispersing media, Polarimetry, Starch determination. See STARCH, Determination, Polarimetry, Dispersing media, Calcium chloride
- CALCIUM CHLORIDE—ZIRCONIUM TETRAFLUORIDE—BARIUM CHLORIDE**. See BARIUM CHLORIDE—CALCIUM CHLORIDE—ZIRCONIUM TETRAFLUORIDE
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**CALCULATING DEVICES**

Related Headings:

SLIDE RULES

**CALCULATING MACHINES**

Related Headings:

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**CALENDER STACK BARRING, Papermaking. See PAPER-MAKING, Barring, Calender stack****CALENDERS, Papermaking. See PAPERMAKING, Calenders****CALIFORNIA**

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PORTS, Los Angeles

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**CALOR GAS, Heating, Swimming baths. See SWIMMING**

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**CAMERAS, X-ray diffraction.** See **X-RAYS, Diffraction, Cameras**

**CAMERAS, X-ray diffraction, Texture studies, Crystals.** See **CRYSTALS, Textures, Studies, X-ray diffraction, Cameras**

**CAMERAS, Zoom, Cinematography.** See **CINEMATOGRAPHY, Cameras, Zoom**

**CAMERON HIGHLANDS (Malaya)**

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**HYDROELECTRIC POWER STATIONS, Cameron Highlands (Malaya)**

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 CHEMICAL TECHNOLOGY, Canada  
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CANNING, Cake. See CAKE, Canning

CANNING, Crabs. See CRABS, Canning

CANNING, Crayfish. See CRAYFISH, Canning

CANNING, Fish. See FISH, Canning

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CANNING, Fruit salad. See FRUIT, Salad, Canning

CANNING, Mushrooms. See MUSHROOMS, Canning

CANNING, Shellfish. See SHELLFISH, Canning

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RAILWAYS, Stations, London, Cannon Street

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## CANS, Corrugated

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## CANS, Curling tools

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**CANS, Seams, Side**

Neater can seams. W. Richards. Tin-Printer & Box Maker, 39 (Sep 63) p.4

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**CANTERBURY**

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TOWN PLANNING, Canterbury

**CANTERBURY. COLLEGE OF ART. School of Architecture**

Putting practical training into practice: Canterbury School of Architecture. R. W. Paine. R. Inst. of Brit. Architects J., 70 (Mar 63) p.113-14

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**CANTILEVER PLATES.** See PLATES, Cantilever

**CANTILEVER ROLLS, Rolling, Steel.** See STEEL, Rolling, Rolls, Cantilever

**CANTINIEAU HELICOPTERS.** See HELICOPTERS, Types, Cantinieau Bamby

**CANVAS, Exhibition structures.** See EXHIBITION STRUCTURES, Canvas

**CAPACITANCE**

Related Headings:

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**CAPACITANCE, Altimeters.** See ALTIMETERS, Capacitance

**CAPACITANCE, Comparators**

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**CAPACITANCE, Proximity meters.** See PROXIMITY METERS

**CAPACITANCE, Pseudo, Adsorption, Electrodes.** See

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**CAPACITANCE DETECTORS, Level indicators, Water.** See

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**CAPACITANCE DETECTORS, Sensing, Touch.** See

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**CAPACITANCE DETECTORS, Viscous fluids, Food**

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**CAPACITANCE DETECTORS, Water absorption measurement,**

Paint. See PAINT, Water absorption, Measurement,

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**CAPACITIVE TRANSDUCERS.** See TRANSDUCERS, Electroacoustics, Capacitive

**CAPACITOR MICROPHONES.** See MICROPHONES, Condenser

**CAPACITOR MOTORS.** See ELECTRIC MOTORS, Induction, Capacitor

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**CARBON DIOXIDE-MONOXIDE ATMOSPHERES, Oxidation, Stainless steel.** See STEEL, Stainless, Oxidation, Carbon dioxide-Carbon monoxide atmospheres

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ADIPIC ACID

AMINO ACIDS

BENZOIC ACID

$\omega$ -DICARBOXYLIC ACIDS

E.D.T.A.

FATTY ACIDS

FORMIC ACID

GLUCONIC ACID

GLYCOLIC ACID

LACTIC ACID

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- CARDS, Punched, Control systems, Carpet manufactures.** See **CARPETS, Manufactures, Control systems, Punched card**
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- CATHODE RAY TUBES, Displays, Characteristic curves, Semiconductors.** See **SEMICONDUCTORS, Characteristic curves, Cathode ray tube displays**
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- Chelating agents: a review. J. K. Aiken. *J. of Soc. of Leather Trades' Chemists*, 47 (Mar 63) p.147-55. refs.

**CHELATING AGENTS**

- Related Headings:  
 E.D.T.A.

**CHELMSFORD**

See

TOWN PLANNING, Chelmsford

**CHELSEA**

See

HOUSING, Chelsea

**CHELSEA COLLEGE OF SCIENCE & TECHNOLOGY**

- Chelsea College of Science & Technology. C. C. Hentschel & J. F. J. Dippy.—Department of Chemistry. J. F. J. Dippy.—Department of Botany & Zoology. C. C. Hentschel.—Chelsea School of Pharmacy. D. C. Harrod.—Department of Physiology & Pharmacology. S. E. Dicker.—Department of Geology. W. E. Smith.—Department of Mathematics. A. E. Ludlam.—Department of Physics. R. S. Longhurst. *Chemistry & Industry* (25 May 63) p.841-51. il.

**CHEMICAL ANALYSIS. See ANALYSIS, Chemical****CHEMICAL BALANCES. See BALANCES, Chemical****CHEMICAL BONDS, Strength, Determination, Heats of reaction**

- Reaction heats and bond strengths. C. A. Hogarth. *Chemistry & Industry* (11 May 63) p.768-70

**CHEMICAL CLEANING, Boilers. See BOILERS, Cleaning, Chemical****CHEMICAL CONTROL, Weeds, Railways. See RAILWAYS, Weeds, Control, Chemical****CHEMICAL CONVERSION COATINGS, Metals. See METALS, Coatings (Chemical conversion)****CHEMICAL ENGINEERING**

- Chemical engineering fundamentals, pt.8. K. L. Butcher. *Chemical & Process Engng.*, 44 (Jun 63) p.316+  
 Costs, courage, and calculated risk in chemical engineering. C. E. Spearing. *Trans. of Instn. of Chemical Engrs.*, 41 (Jun 63) p.183-7  
 Engineering without wheels. D. C. Freshwater. *Chemistry & Industry* (25 May 63) p.856-7.

**CHEMICAL ENGINEERING**

Related Headings:

CHEMICAL KINETICS  
 CHEMICAL REACTIONS  
 GAS-LIQUID REACTIONS  
 GAS-SOLID REACTIONS  
 HEATING  
 MIXING  
 REFRIGERATION, Chemical engineering  
 UNIT OPERATIONS  
 UNIT PROCESSES

**CHEMICAL ENGINEERING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Profession  
Technicians  
Education  
Research

Plant  
Design  
Control systems

Technical activities  
Production, Management  
Programming  
Data correlation  
Radioisotope techniques

Raw materials  
Fuels  
Water

By products  
Combustion gases

Special fields  
High temperature  
Low temperature

**CHEMICAL ENGINEERING, Control systems, Conductivity meters, Electrodeless**

Electrodeless conductivity meter for process control. E. Harrison & P. F. Roach. *Radio & Electronic Engr.*, 26 (Jul 63) p.25-33. il. refs.

**CHEMICAL ENGINEERING, Control systems, Counters**

Counting techniques in process control, pt.1. R. J. Timms. *Control*, 7 (Jul 63) p.6-9. il.

Counting techniques in process control, pt.2. R. J. Timms. *Control*, 7 (Aug 63) p.79-82. il.

**CHEMICAL ENGINEERING, Control systems, Instruments**

Justification and payout of on-line stream analysers. D. J. Fraade. *Process Control & Automation*, 10 (Oct 63) p.407-13. il. refs.

**CHEMICAL ENGINEERING, Costs**

Cost estimation in the chemical industry. H. Stogens. *Brit. Chemical Engrg.*, 8 (Dec 63) p.825-7. il.

**CHEMICAL ENGINEERING, Data correlation**

Correlation of engineering data. P. N. Rowe. *Trans. of Instn. of Chemical Engrs.*, 41 (Mar 63) p.CE69-74

**CHEMICAL ENGINEERING, Design**

Consideration of the "Feilden Report" in relation to the chemical industry. P. Batterley. *Trans. of Instn. of Chemical Engrs.*, 41 (Nov 63) p.CE303-5

**CHEMICAL ENGINEERING, Education**

Practising engineer as a lecturer. A. P. Shahbenderian. *Engineering*, 195 (21 Jun 63) p.844. refs.

**CHEMICAL ENGINEERING, Education, France**

Chemical engineering education in France. C. N. Kenney. *Chemistry & Industry* (2 Feb 63) p.201-3. il.

Technical training for the chemical industry: how they do it in France. J. H. Skellon. *Manufacturing Chemist*, 34 (Oct 63) p.486-8. il.

**CHEMICAL ENGINEERING, Combustion gases, Cleaning, Particles, Collection, Effect of high temperature**

Effect of high temperatures on particle collection mechanisms. M. W. Thring & W. Strauss. *Trans. of Instn. of Chemical Engrs.*, 41 (Jul/Aug 63) p.248-54. il. refs.

**CHEMICAL ENGINEERING, Control systems**

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Progress in process instrumentation. Regulus. *Industrial Chemist*, 38 (Dec 62) p.631-3. il. refs.

Sensing the inaccessible, pt.2: linking process and control. H. A. Thomas. *Data & Control*, 1 (Feb 63) p.24-7. il.

**CHEMICAL ENGINEERING, Control systems, Computers**

Automatic data acquisition, logging and computer control systems (summary) T. B. M. Rybak. *Industrial Chemist*, 39 (Sep 63) p.476-80. il. refs.

Computer control in the process industry. D. A. Vesty. *Process Control & Automation*, 10 (Feb 63) p.55-9. il.

**CHEMICAL ENGINEERING, Control systems, Computers, Analogue**

Multivariable optimising control by an analogue computer. P. M. E. M. van der Grinten. *Trans. of Instn. of Chemical Engrs.*, 40 (Dec 62) p.356-63. il. refs.

Status report on computer control. J. Gutzon. *Trans. of Instn. of Chemical Engrs.*, 40 (Dec 62) p.397-400

**CHEMICAL ENGINEERING, Control systems, Computers, Module units**

Economical system of computer control [ARCH] *Brit. Chemical Engrg.*, 8 (Feb 63) p.104-5. il.

**CHEMICAL ENGINEERING, Education, Postgraduate**

Postgraduate training in a process industry. W. V. Coles. *Chartered Mechanical Engr.*, 10 (Jul 63) p.368-71. il.

**CHEMICAL ENGINEERING, Education, Simulators**

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Universal process trainer. *Process Control and Automation*, 10 (Mar 63) p.105-6. il.

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**CHEMICAL ENGINEERING, Fuels, Great Britain**

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**CHEMICAL ENGINEERING, Great Britain**

U.K. chemical firms must invest more to retain position in Europe. *Chemical Age*, 89 (23 Feb 63) p.277-8

**CHEMICAL ENGINEERING, High temperature**

Evaluation of high-temperature chemical technology. W. M. Goldberger. *Brit. Chemical Engrg.*, 8 (Sep 63) p.610-15. il. refs.

**CHEMICAL ENGINEERING, Papermaking. See PAPER-MAKING, Chemical engineering****CHEMICAL ENGINEERING, Plant**

Factors involved in choosing a main contractor, pt.2.

*Chemical Age*, 90 (26 Oct 63) p.651-2

Fluor book orders worth £25m. + in five years. 'Contractus'. *Chemical Age*, 90 (6 Jul 63) p.15-16. il.

Obsolescence of chemical process equipment. C. S. H. Munro. *Trans. of Instn. of Chemical Engrs.*, 41 (Apr 63) p.CE80-5

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**CHEMICAL ENGINEERING, Plant**

Related Headings:

BOILERS, Chemical plant

BUBBLE COLUMNS

CHEMICAL REACTORS

FIXED BEDS

FLUIDISED BEDS

FURNACES, Cylindrical, Chemical plant

HOMOGENISERS, Ultrasonic

PACKED BEDS

PACKED COLUMNS

PACKED TOWERS

PLATE COLUMNS

PRESSURE VESSELS

PUMPS, Chemical plant

**CHEMICAL ENGINEERING, Plant, Air pollution.** See AIR

POLLUTION, Chemical engineering plant

**CHEMICAL ENGINEERING, Plant, Aluminium**

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**CHEMICAL ENGINEERING, Plant, Aluminium, Welding**

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**CHEMICAL ENGINEERING, Plant, Castings**

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**CHEMICAL ENGINEERING, Plant, Cathodic protection**

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**CHEMICAL ENGINEERING, Plant, Chimneys**

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**CHEMICAL ENGINEERING, Plant, Civil engineering**

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**CHEMICAL ENGINEERING, Plant, Concrete**

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**CHEMICAL ENGINEERING, Plant, Construction**

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**CHEMICAL ENGINEERING, Plant, Europe**

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**CHEMICAL ENGINEERING, Plant, Fires**

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**CHEMICAL ENGINEERING, Plant, Fires, Explosions**

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**CHEMICAL ENGINEERING, Plant, Graphite, Polybloc system**

X-flow Polybloc system of construction for graphite. A. Hilliard. *Brit. Chemical Engng.*, 8 (Apr 63) p.234-7. il.

**CHEMICAL ENGINEERING, Plant, Great Britain**

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**CHEMICAL ENGINEERING, Plant, Maintenance, Work study**

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**CHEMICAL ENGINEERING, Plant, Pipes**

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**CHEMICAL ENGINEERING, Plant, Simulators, Computers**

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**CHEMICAL ENGINEERING, Plant, Steel, Glass-lined**

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**CHEMICAL ENGINEERING, Plant, Storage tanks**

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**CHEMICAL ENGINEERING, Plant, Tantalum, Corrosion resistance**

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**CHEMICAL ENGINEERING, Plant, Thermoplastics, Welding**

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**CHEMICAL ENGINEERING, Plant, Titanium, Corrosion resistance**

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**CHEMICAL ENGINEERING, Plant, Valves**

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**CHEMICAL ENGINEERING, Plant, Yield, Determination, Statistics**

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**CHEMICAL ENGINEERING, Research**

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**CHEMICAL ENGINEERING, Research, Universities, Europe**

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**CHEMICAL ENGINEERING, Water, Conservation**

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**CHEMICAL ENGINEERING, Water, Purification, Carbon, Activated, Mechanical handling**

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**CHEMICAL ENGINEERING, Water supplies**

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**CHEMICAL ENGINEERS**

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**CHEMICAL INDUSTRIES. See CHEMICAL TECHNOLOGY****CHEMICAL KINETICS, Differential equations, Quasi-steady state approximation, Singular perturbations**

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**CHEMICAL MACHINING**

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**CHEMICAL MILLING. See ETCHING, Photochemical****CHEMICAL PULP, Paper, Printing. See PRINTING, Paper, Pulps, Chemical****CHEMICAL REACTIONS, Diffusion controlled, Zone of reaction**

Structure of the zone of diffusion controlled reaction. S. K. Friedlander & K. H. Keller. *Chemical Engng. Science*, 18 (Jun 63) p.365-75. il. refs.

**CHEMICAL REACTIONS, Heterogeneous (Chemical reactors, Tubular, Stirred) Analysis, Computers, Analogue**

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CHEMICAL REACTORS, Heterogeneous chemical reactors.  
See CHEMICAL REACTIONS, Heterogeneous, Chemical reactors

**CHEMICAL REACTORS, Samples, Gas chromatography, Apparatus, Modular design**

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**CHEMICAL TECHNOLOGY**

Related Headings:

ACIDS  
ADHESIVES  
AGRICULTURAL CHEMICALS  
ALKALIS  
ANTISEPTICS  
ASBESTOS CEMENT  
BASES (Chemistry)  
BEVERAGES  
BLEACHES  
BLEACHING  
CEMENT, Production  
CERAMICS  
CHEMICAL ENGINEERING  
CHEMICALS  
COLLOIDS  
COLOUR INDUSTRIES  
CONCRETE  
CORROSION  
COSMETICS  
DISINFECTANTS  
DRUGS  
DYEING  
DYES  
ESSENTIAL OILS

**CHEMICAL TECHNOLOGY**

Related Headings—cont.

EXPLOSIVES  
FOOD  
FREE RADICALS  
FUELS  
GASES, Industrial  
GELATION  
GLASS  
INORGANIC CHEMICALS  
LIME  
OILS  
ORGANIC CHEMICALS  
PAINT  
PERFUMES  
PETROLEUM  
POLISHES  
POLYMERS  
PYROTECHNICS  
SEMI-MICROTECHNIQUES  
SOAPS, Metallic  
SOLVENTS  
STARCH  
SURFACE ACTIVE AGENTS  
TAR PRODUCTS  
TOILET PREPARATIONS

**CHEMICAL TECHNOLOGY, Canada**

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**CHEMICAL TECHNOLOGY, Economics**

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- CHROMIUM-MOLYBDENUM-STEEL, Pipes, Steam turbines, Turbo-alternators. See TURBO-ALTERNATORS, Steam turbines, Pipes, Steel-Chromium-Molybdenum
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DETECTORS  
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MULTIPLIERS, Electronics  
OSCILLATORS  
PULSE-HEIGHT ANALYSERS  
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**CLAMPED-TIP CUTTERS, Milling.** See **MILLING, Cutters, Clamped tip**

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**CLASSIFIERS, Air, Wood particles, Particle board manufacture.** See **PARTICLE BOARDS, Manufactures, Wood particles, Air classifiers**

**CLASSIFIERS, Thickness, Tinplate.** See **TINPLATE, Thickness, Classifiers**

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**CLATHRATES, Water.** See **HYDRATES, Gas**

**CLAY**

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FULLERS' EARTH

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- CLEANING, Buses.** See BUSES, Cleaning
- CLEANING, Chemical, Boilers.** See BOILERS, Cleaning, Chemical
- CLEANING, Coal.** See COAL, Cleaning
- CLEANING, Coal fired boilers.** See BOILERS, Coal-fired, Cleaning
- CLEANING, Containers, Food.** See FOOD, Containers, Cleaning
- CLEANING, Diesel locomotives.** See LOCOMOTIVES, Diesel, Cleaning
- CLEANING, Discs, Sound records.** See DISCS, Sound records, Cleaning
- CLEANING, Earth moving equipment.** See EARTH MOVING EQUIPMENT, Cleaning
- CLEANING, Electric locomotives.** See LOCOMOTIVES, Electric, Cleaning
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- CLEANING, Gases.** See GASES, Scrubbing
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- CLEANING, Lorries.** See LORRIES, Cleaning
- CLEANING, Metals.** See METALS, Cleaning
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- CLEANING, Motor coaches.** See MOTOR COACHES, Cleaning
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- CLEANING, Tanks, Ships, Tankers.** See TANKERS, Ships, Tanks, Cleaning
- CLEANING, Tracks, Underground railways.** See RAILWAYS, Underground, Tracks, Cleaning
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- CLEANING, Waste paper, Paper board manufacture.** See BOARD, Paper, Manufactures, Waste paper, Cleaning
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## CLOTHING

Related Headings :

COSTUMES  
DRESSING-GOWNS  
DRESSES  
FOOTWEAR  
GLOVES  
HOSIERY  
KNITWEAR  
OUTERWEAR  
OVERCOATINGS  
SCARVES  
SHIRTS  
SUITINGS  
TIGHTS

## CLOTHING

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**CLOTHING, Thermal equilibrium, Effect of body moisture losses**

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**CLOTHING, Woollen**

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**CLOVES, Industry, Zanzibar**

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**CLUBHOUSES, Interior decoration**

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**CLUBHOUSES (Sailing) See SAILING, Clubhouses****CLUTCHES**

Design and application of clutches. E. T. Wardle. *Engng. Materials & Design*, 6 (Nov 63) p.796-8. il.

**CLUTCHES, Hysteresis, Handling machines, Fuel elements, Gas cooled nuclear reactors. See NUCLEAR REACTORS, Gas cooled, Fuel elements, Handling, Machines, Clutches, Hysteresis****CLUTCHES, Linear motion machines. See MACHINES, Linear motion, Clutches****CLUTCHES, Magnetic**

Electromagnetic clutches and couplings. J. L. Watts. *Power & Works Engng.*, 58 (Sep 63) p.28-34. il.

**CLUTCHES, Motor cars**

Clutches. R. F. Ansdale. *Automobile Engng.*, 53 (15 May 63) p.222-5. il. ref.

**CLUTCHES, Multi-disc, Effect of spline friction**

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**CLYDE RIVER**

See

DAMS, Clyde River  
DOCKS, Dry, Greenock

**CLYDE TUNNEL**

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Clyde Tunnel, Glasgow. *Roads & Road Construction*, 41 (Sep 63) p.295-7. il.

Clyde Tunnel now open to traffic—first of two 2,500 ft. tunnels completed. *Highways & Bridges & Engng. Works*, 31 (10 Jul 63) p.12-13. il.

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Tunnel under the Clyde. *Electrical Times*, 144 (4 Jul 63) p.20-1. il.

**CLYDE VALLEY**

See

TOWN & COUNTRY PLANNING, Clyde Valley

**COACHES, See MOTOR COACHES****COAGULATION, Colloids. See COLLOIDS, Coagulation****COAL**

Coal selection, pt.1. J. N. Williams. *Steam & Heating Engng.*, 33 (Oct 63) p.6-11

Coal selection, pt.2. J. N. Williams. *Steam & Heating Engng.*, 33 (Nov 63) p.42-7

Conventional and nuclear fuels. G. T. Seaborg. *Nuclear Energy* (Oct 63) p.283-5

**COAL**

Related Headings:

ANTHRACITE

COKE

FUELS, Solid

LIGNITE

**COAL—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Research**Physico-chemical aspects*

*Electron microscopy*

*Spectroscopy*

*Gamma irradiation*

*Drill cores*

*Physics*

*Reflectivity*

*Size distribution*

*Caking capacity*

*Chemistry*

*Heating*

*Combustion*

*Ignition*

*Oxidation*

*Sulphur removal*

*Constituents*

*Macerals*

*Ash*

*Analysis*

*Determination of...*

*Geology*

*Seams*

*Technical operations*

*Prospecting*

*Mining*

*Mines*

*Preparation*

*Flotation*

*Screening*

*Cleaning*

*Drying*

*Blending*

*Grinding*

*Sampling*

*Briquetting*

*Chemical processing*

*Gasification*

*Handling*

*Bulk handling*

*Loading*

*Weighing*

*Distribution*

*Transport*

*Containers*

*Pipelines*

*Storage*

*Bunkers*

**COAL—SUBHEADINGS—Synopsis—cont.**

Forms of coal  
Pulverised  
Slurry

Kinds of coal  
Packaged  
Brown  
Bituminous  
Sub-bituminous  
Dehydrogenated

Utilisation  
Derivatives  
Oils

**COAL, Ash, Silica ratio, Determination, Spectroscopy**

Estimation of silica ratios from semi-quantitative spectrochemical analyses of coal ash. M. C. Clark & D. J. Swaine. *Fuel: J. of Fuel Science*, 42 (Jul 63) p.315-18. refs.

**COAL, Bituminous**

Related Headings:  
COAL, Sub-bituminous

**COAL, Bituminous, Analysis, Solvent extraction, Benzene**

Analysis of benzene extracts of Yubari coal, pt.1: chromatographic fractionation of petroleum ether-methanol soluble portion and ultra-violet and infra-red spectra of the fractions. K. Ouchi & K. Imuta. *Fuel: J. of Fuel Science*, 42 (Jan 63) p.25-35. refs.

**COAL, Bituminous, Hydrogenolysis, Catalysts, Copper chromite**

Studies on the chemical structure of coal, pt.2: hydrogenolysis of bituminous coal and humic acid in the presence of copper-chromite catalyst. Y. Takegami, S. Kajiyama & C. Yokokawa. *Fuel: J. of Fuel Science*, 42 (Jul 63) p.291-302. il. refs.

**COAL, Bituminous, Macerals, Resinite**

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**COAL, Bituminous, Macerals, Resinite, Spectroscopy, Infra-red**

Infra-red spectrum of resinite in bituminous coal. D. G. Murchison. *Nature*, 198 (20 Apr 63) p.254-5. il. refs.

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Extraction of a vitrinite and chemical analysis of the fractions. A. Halleux & H. de Greef. *Fuel: J. of Fuel Science*, 42 (May 63) p.185-202. refs.

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Studies in aerial oxidation, pt.1: oxidation of the vitrinite from a bituminous coal. R. B. Conrow, R. A. Durie, J. S. Shannon & S. Sternhell. *Fuel: J. of Fuel Science*, 42 (Jul 63) p.275-90. il. refs.

**COAL, Blast furnaces. See FURNACES, Blast, Coal****COAL, Blending**

Blending—present and future. F. D. Davies. *Steel & Coal*, 187 (30 Aug 63) p.421-3

**COAL, Blending, Machines**

Bretby Mk.II auto-proportioner. M. K. Laverick. *Colliery Guardian*, 207 (5 Sep 63) p.302-4. il.

**COAL, Boilers. See BOILERS, Coal****COAL, Briquetting**

Can we make better smokeless fuel for the home? A. D. Cummings. *New Scientist*, 17 (3 Jan 63) p.19-20. il.  
Manufactured fuels for closed appliances (summary) G. Kardaun & D. Viets. *Gas & Coke*, 25 (Jun 63) p.249-53. il.

**COAL, Briquetting, Fluidisation**

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Pore structure of coal briquettes prepared at various compacting pressures. D. Dollimore, J. Dollimore & D. V. Nowell. *Brit. J. of Applied Physics*, 14 (Jun 63) p.365-7. il. refs.

**COAL, Brown, Australia**

Fuel and power from brown coal in Australia. E. Longden. *Steel & Coal*, 187 (6 Sep 63) p.454-6. il.

**COAL, Brown, Bitumen production. See BITUMEN, Production, Brown coal****COAL, Brown, Determination of water, Heating, Ovens, Gas shielded**

Use of the B.S. minimum free space oven for the determination of moisture in analysis samples of brown coal. F. A. Bull. *Fuel: J. of Fuel science*, 42 (May 63) p.203-10. refs.

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**COAL, Brown, Mining, Opencast, Surveying, Photogrammetry**

Quantity surveying of opencast workings by aerial photogrammetry. H. Heyll. *Mine & Quarry Engng.*, 29 (May 63) p.204-13. il. refs.

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Distribution and origin of minor elements in coal: progress review no.55. F. V. Bethell. *J. of Inst. of Fuel*, 36 (Nov 63) p.478-92

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**COAL, Cleaning, Baum jigs**

Relationship between capacity and performance in Baum jig washing. W. M. Wallace. *Colliery Engng.*, 40 (Jan 63) p.19-23

**COAL, Cleaning, Classifier-cyclones**

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Dense-medium cyclones for fine coal: abstracts of "Cleaning unsized fine coal in a dense-medium cyclone pilot plant". M. Sokaski & M. R. Geer. *Mining Magazine*, 109 (Sep 63) p.182-3

**COAL, Cleaning, Plant, Filters, Vacuum, Rotary, Discs, Paper—Phenolic resins**

Plastic filter disc for coal cleaning plant [Simonacco]

Fluid Handling (Apr 63) p.129-30. il.

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**COAL, Coking. See COKING, Coal****COAL, Containers, Filling**

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**COAL, Dehydrogenated**

Effect of dehydrogenation on the structure of two coals.

P. H. Dicker, M. K. Flagg, A. F. Gaines & T. G. Martin.

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**COAL, Distribution, Depots**

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Mechanised coal depot [Chessington] Colliery Engng., 40

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Second depot speeds and protects coal. Engineering, 196

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**COAL, Drill cores, Extraction**

Hermetically-sealed drill cores. Mining J., 261 (19 Jul 63)

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**COAL, Drying, Plant**

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**COAL, Dust—Air, Flames. See FLAMES, Coal dust—/****COAL, Electron microscopy**

Applications of electron microscopy to mining. W. J.

Henderson & J. Platt. Colliery Engng., 40 (Sep 63)

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**COAL, Fuel, Iron production. See IRON, Production, Fuel, Coal****COAL, Gamma irradiation, Cobalt-60**

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**COAL, Gasification, Underground**

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ALUMINISING  
ENAMELLING  
GALVANISING  
HARDFACING  
METALLISING  
PAINTING  
SHERARDISING  
TINNING

**COATING, Aluminium sheets. See SHEETS, Aluminium, Coatings****COATING, Aluminium. See ALUMINIUM, Coating****COATING, Copper. See COPPER, Coating****COATING, Dyehouse equipment. See DYEHOUSES, Equipment, Coating****COATING, Labels, Containers. See CONTAINERS, Labels, Coating****COATING, Metal, Strips. See STRIPS, Metal, Coating****COATING, Metals. See METALS, Coating****COATING, Paper. See PAPER, Coating****COATING, Refinery equipment, Petroleum. See PETROLEUM, Refineries, Equipment, Coating****COATING, Rolls, Papermaking machines. See PAPER-MAKING, Machines, Rolls, Coating****COATING, Sheets. See SHEETS, Coating****COATING, Steel sheets. See STEEL, Sheets, Coatings****COATING, Steel strips. See STRIPS, Steel, Coating****COATING, Tin. See TIN, Coating****COATING, Uranium dioxide, Fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Uranium dioxide, Coating****COATING, Wires. See WIRES, Coating****COATING, Wood. See WOOD, Coating****COATINGS****Related Headings:**

ENAMELS  
LACQUERS  
LIMEWASH  
PAINT  
VARNISHES

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**COIGNET SYSTEM, Prefabricated buildings.** See **BUILDINGS, Prefabricated, Coignet system**

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**COILS, Search, Magnetic flux measurement, Gas discharge.**

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## COLOUR INDUSTRIES

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GILLING

**COMBING, Cotton.** See COTTON, Combing

**COMBING, Wool.** See WOOL, Combing

**COMBUSTION**

Related Headings:

BURNERS

EXPLOSIONS

FIRING

FLAMES

IGNITION

SOOT

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**COMBUSTION, Ammonium perchlorate.** See AMMONIUM PERCHLORATE, Combustion

**COMBUSTION, Ammonium perchlorate, Oxidisers, Propellants.** See PROPELLANTS, Oxidisers, Ammonium perchlorate, Combustion

**COMBUSTION, Cellulosic solids.** See CELLULOSIC SOLIDS, Combustion

**COMBUSTION, Droplets, Monopropellants.** See MONOPROPPELLANTS, Droplets, Combustion

**COMBUSTION, Fuel oil.** See FUEL OIL, Combustion

**COMBUSTION, Fuels, Solid-fuelled rockets.** See ROCKETS, Solid-fuelled, Fuels, Combustion

**COMBUSTION, Gas turbines.** See GAS TURBINES, Combustion

**COMBUSTION, Gases, Effluents.** See EFFLUENTS, Gases, Combustion

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Comminution

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Use of a computer by a medium-sized local authority. E. C. Lay. *Computer Bull.*, 7 (Jun 63) p.7-13

Use of a remote digital computer on an open-shop basis in agricultural research. T. H. Anstey & K. W. Smillie.

*Computer J.*, 6 (Jul 63) p.118-20. refs.

Using electronic computers for production control, pt.1.

J. H. A. Smith. *Mass Production*, 39 (Feb 63) p.45-51. il.

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**COMPUTERS****Related Headings:**

ANALOGUE-DIGITAL CONVERTORS

CODES, Binary

EQUATIONS, Solving, Instruments

READING MACHINES

SHIFT REGISTERS

TRANSLATORS, Electronic

**COMPUTERS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Bureaux

Operators

Costs

Education

Research

Standards

History

Particular countries

*Great Britain*

*Europe*

Technical activities

*Design*

*Evaluation*

*Housing*

*Buildings*

Programs

Parts of computers

Circuits

*Logical elements*

*Arithmetic units*

*Floating point arithmetic*

*Adders*

*Input units*

*Decoders*

*Output units*

*Storage units*

Kinds of computers

*Module units*

*Cryotron*

*Picture arithmetic*

*Analogue*



**COMPUTERS—SUBHEADINGS—Synopsis—cont.**

Kinds of computers—cont.

Training

Applications

Universities

Government departments

Control systems

Aircraft

Translations

**COMPUTERS, Accounting, Pay, Soldiers.** See **SOLDIERS, Pay, Accounting, Computers****COMPUTERS, Adders, Cryotrons**Parallel binary adders using the crossed-film cryotron. D. W. Davies. *Proc. of Instn. of Electrical Engrs.*, 110 (Jun 63) p.999-1007. il. refs.**COMPUTERS, Air defence.** See **AIR DEFENCE, Computers****COMPUTERS, Air transport.** See **AIR TRANSPORT, Computers****COMPUTERS, Aircraft**Compound air navigation system, pt.2: use of an airborne digital computer in a compound navigation system [Omni-trac] M. G. Pearson. *Inst. of Navigation J.*, 16 (Oct 63) p.472-5Experimental airborne computer [Dexan] W. R. Payne. *Inst. of Navigation J.*, 16 (Apr 63) p.216-19. il.Hybrid digital airborne navigational computer [for LFE Electronics AN/APN-131 system] J. B. Madeira. *World Aviation Electronics & Controls*, 3 (Jul 63) p.446-50. il.**COMPUTERS (Aircraft) Gearboxes, Plates, Aluminium alloys, Machining, Jig borers**Numerical control system [Newall 1520 CC] *Mass Production*, 39 (May 63) p.86-7. il.**COMPUTERS (Aircraft) Gearboxes, Plates, Aluminium alloys, Machining, Jig borers, Control systems**AEI continuous numerical control arrangements for a jig boring machine [Newall 1520 CC] *Machinery*, 103 (4 Sep 63) p.523-4. il.Automatic control of machine tools [Newall 1520 CC] *Brit. Communications & Electronics*, 10 (May 63) p.352. il.Continuously controlled machine tool [Newall 1520 CC] J. N. Muir. *Industrial Electronics*, 1 (Nov 63) p.733-8.Electronically controlled jig-borer [Newall 1520cc] *Industrial Electronics*, 1 (Apr 63) p.388-9. il.Numerically controlled jig-borer. *Control*, 7 (Aug 63) p.88.**COMPUTERS (Aircraft) Manufactures, Machining, Jig borers, Control systems**Director designs computer. *Data & Control*, 1 (Jun 63) p.13**COMPUTERS, Analogue**Analogue computing. *Computer Bull.*, 6 (Mar 63) p.139-40Analogue computing: application and stability. H. A. Darker. *English Electric J.*, 18 (Nov/Dec 63) p.24-30. il. refs.Analogue computing: equipment and performance. H. A. Darker. *English Electric J.*, 18 (Sep/Oct 63) p.14-21. il. refs.Value of precision analogue computers. *Engineering*, 196 (5 Jul 63) p.31-2. il.**COMPUTERS, Analogue**

Related Headings:

AMPLIFIERS, Operational

**COMPUTERS, Analogue, Adaptive control studies.** See **CONTROL SYSTEMS, Adaptive, Studies, Computers, Analogue****COMPUTERS, Analogue, Analysis, Stirred tubular reactors, Heterogeneous chemical reactions.** See **CHEMICAL REACTIONS, Heterogeneous (Chemical reactors, Tubular, Stirred) Analysis, Computers, Analogue****COMPUTERS, Analogue, Circuits, Negative resistance, D.C., Series, Transistor**

Series type d.c. negative resistance for analogue computers.

P. V. Indiresan & S. Sarindra. *Radio & Electronic Engr.*, 26 (Nov 63) p.417-20. il. refs.**COMPUTERS, Analogue, Circuits, Negative resistance, Transistor**Negative resistance computing element. A. K. Godden & T. Cookes. *Electronic Engrg.*, 35 (Nov 63) p.751-3. il.**COMPUTERS, Analogue, Civil engineering.** See **CIVIL ENGINEERING, Computers, Analogue****COMPUTERS, Analogue, Control studies, Hovercraft.** See **HOVERCRAFT, Controls, Studies, Computers, Analogue****COMPUTERS, Analogue, Control systems, Chemical engineering.** See **CHEMICAL ENGINEERING, Control systems, Computers, Analogue****COMPUTERS, Analogue, Electromechanical**Precision ball resolver. *Engng. Materials & Design*, 6 (Mar 63) p.194-5. il.**COMPUTERS, Analogue, Electromechanical, Control systems, Light petroleum distillates, Town gas production.** See **GAS (Town) Production, Light petroleum distillates, Control systems, Computers, Analogue, Electromechanical****COMPUTERS, Analogue, Errors, Amplifiers, Operational**Analogue computer errors due to gain and bandwidth limitations of the operational amplifiers. P. G. Davis. *Electronic Engrg.*, 35 (Apr 63) p.246-9. il. refs.**COMPUTERS, Analogue, Ground water studies.** See **GROUND WATER, Studies, Computers, Analogue****COMPUTERS, Analogue, H.F.**Some aspects of a high frequency analogue computer. J. F. Millar. *Electronic Engrg.*, 35 (Jul 63) p.439-43. il.**COMPUTERS, Analogue, Linear induction motor performance.** See **ELECTRIC MOTORS, Induction, Linear, Performance, Computers, Analogue****COMPUTERS, Analogue, Numerical solution, Heat conduction equation.** See **HEAT, Conduction, Equation, Numerical solution, Computers, Analogue****COMPUTERS, Analogue, Pinch effect collapse studies, Plasmas.** See **PLASMAS, Pinch effect, Collapse stage, Studies, Computers, Analogue****COMPUTERS, Analogue, Potentiometer**AFAC—the automatic field-analogue computer—a new breed of computer. K. C. Garner. *Process Control & Automation*, 10 (Feb 63) p.51-4. il. refs.**COMPUTERS, Analogue, Simulation, Adoptive control systems, Stills, Distillation, Alcohols—Water.** See **ALCOHOLS—WATER, Distillation, Stills, Control systems, Adoptive, Simulation, Computers, Analogue****COMPUTERS, Analogue, Simulators, Control systems, Sea-to-air missiles.** See **MISSILES, Sea-to-air, Control systems, Simulators, Computers, Analogue****COMPUTERS, Analogue, Simulators, Distillation columns.** See **DISTILLATION, Columns, Simulators, Computers, Analogue****COMPUTERS, Analogue, Simulators, Nuclear reactors.** See **NUCLEAR REACTORS, Simulators, Computers, Analogue****COMPUTERS, Analogue, Simulators, Sampled-data control systems.** See **CONTROL SYSTEMS, Sampled-data, Simulators, Computers, Analogue****COMPUTERS, Analogue, Simulators, Superheaters.** See **SUPERHEATERS, Simulators, Computers, Analogue****COMPUTERS, Analogue, Simulators, Turbo-alternators.** See **TURBO-ALTERNATORS, Simulators, Computers, Analogue****COMPUTERS, Analogue, Solution, Differential equations, Hydraulic servomechanisms.** See **SERVOMECHANISMS, Hydraulic, Differential equations, Solution, Computers, Analogue****COMPUTERS, Analogue, Solution, Differential equations, Potential distribution, p-n junctions, Semiconductors.** See **SEMICONDUCTORS, p-n junctions, Potential distribution, Differential equations, Solution, Computers, Analogue****COMPUTERS, Analogue, Solutions, Differential equations, Townsend discharge.** See **TOWNSEND DISCHARGE, Differential equations, Solutions, Computers, Analogue**

- COMPUTERS, Analogue, Solution, Equations, Analysis, Control systems. See CONTROL SYSTEMS, Analysis, Equations, Solution, Computers, Analogue
- COMPUTERS, Analogue, Solution, Equation, Equilibrium, Distillation columns, Refining, Petroleum. See PETROLEUM, Refining, Distillation, Columns, Equilibrium, Equations, Solution, Computers, Analogue
- COMPUTERS, Analysis, Design, Aircraft structures. See AIRCRAFT, Structures, Design, Analysis, Computers
- COMPUTERS, Analysis, Distribution, Linguistic units, Languages. See LANGUAGES, Linguistic units, Distribution analysis, Computers
- COMPUTERS, Analysis, Electric power systems. See ELECTRIC POWER SYSTEMS, Analysis, Computers
- COMPUTERS, Analysis, Moment functions, Flat plate concrete structures. See STRUCTURES, Concrete, Flat plate, Moment functions, Analysis, Computers
- COMPUTERS, Analysis, Photographic emulsions, Multiple scattering, Energy measurement, Particles, Proton synchrotrons. See SYNCHROTRONS, Proton, Particles, Energy measurement, Multiple scattering, Photographic emulsions, Analysis, Computers
- COMPUTERS, Analysis, Photomicrographs, Metallography. See METALLOGRAPHY, Photomicrographs, Analysis, Computers
- COMPUTERS, Analysis, Plant ecology data. See PLANT ECOLOGY, Data, Analysis, Computers
- COMPUTERS, Analysis, Pressure distribution, Mains, Water. See WATER, Mains, Pressure distribution, Analysis, Computers
- COMPUTERS, Analysis, Zwicker phons. See PHONS, Zwicker, Analysis, Computers
- COMPUTERS, Architecture design. See ARCHITECTURE, Design, Computers
- COMPUTERS, Arithmetic units, Demonstration circuits**  
Demonstration binary arithmetic unit. F. Dellow. *Electronic Engng.*, 35 (Jan 63) p.8-11. il. refs.
- COMPUTERS, Blast furnaces. See FURNACES, Blast, Computers
- COMPUTERS, Building. See BUILDING, Computers
- COMPUTERS, Building, Hospitals. See HOSPITALS, Building, Computers
- COMPUTERS, Buildings, Air conditioning**  
Air conditioning for a computer centre. Heating, 25 (May 63) p.152-5. il.  
New Midland bank computer centre. Heating & Air Conditioning, 30 (Mar 63) p.217. il.
- COMPUTERS, Bureaux**  
Computing in the North West [Manchester Computer Centre] M. Lancaster. *Data & Control*, 1 (Dec 63) p.16+. il.  
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Service bureaux...outlook set fair? M. Lancaster. *Data & Control*, 1 (Jul 63) p.16-21. il.
- COMPUTERS, Bureaux, Shipping. See SHIPPING, Computer bureaux
- COMPUTERS, Business. See BUSINESS, Computers
- COMPUTERS, Calculations, Detonation, Explosives. See EXPLOSIVES, Detonation, Calculations, Computers
- COMPUTERS, Calculations, Distillation. See DISTILLATION, Calculations, Computers
- COMPUTERS, Calculations, Flow sheets, Countercurrent solvent extraction, Re-cycling, Fuels, Fast reactors. See NUCLEAR REACTORS, Fast, Fuels, Re-cycling, Solvent extraction, Countercurrent, Flow sheets, Calculation, Computers
- COMPUTERS, Calculations, Regression analysis. See REGRESSION ANALYSIS, Calculations, Computers
- COMPUTERS, Calculations, Torsional vibrations, Crankshafts, Engines, Ships. See SHIPS, Engines, Crankshafts, Vibrations, Torsional, Calculations, Computers
- COMPUTERS, Calorimetry, Cryogenics. See CRYOGENICS, Calorimetry, Computers
- COMPUTERS, Civil engineering. See CIVIL ENGINEERING, Computers
- COMPUTERS, Compilation, Timetables, Railways. See RAILWAYS, Timetables, Compilation, Computers
- COMPUTERS, Composing, Printing. See COMPOSING (Printing) Computers
- COMPUTERS, Composing, Printing, Newspapers. See NEWSPAPERS, Printing, Composing, Computers
- COMPUTERS, Control, Cement production. See CEMENT, Production, Control, Computers
- COMPUTERS, Control systems**  
Be fast, be accurate, fail secure. J. P. D. Mullaly. *Data & Control*, 1 (Jun 63) p.20-3. il.  
Computer control—exploratory or predictive? W. T. Lee & R. D. Killick. *Control*, 6 (Jan 63) p.77-81. il. refs.  
Computers in Soviet control application theory. L. A. Steiner. *Measurement & Control*, 2 (May 63) p.209-10
- COMPUTERS, Control systems, Arc furnaces, Steel production. See STEEL, Production, Furnaces, Arc, Control systems, Computers
- COMPUTERS, Control systems, Distillation, Refining, Petroleum. See PETROLEUM, Refining, Distillation, Control systems, Computers
- COMPUTERS, Control systems, Electric power systems. See ELECTRIC POWER SYSTEMS, Control systems, Computers
- COMPUTERS, Control systems, Flame cutting, Shipbuilding. See SHIPBUILDING, Flame cutting, Control systems, Computers
- COMPUTERS, Control systems, Juice, Sugar beet. See SUGAR BEET, Juice, Process control, Computers
- COMPUTERS, Control systems, Machine tools. See MACHINE TOOLS, Control systems, Computers
- COMPUTERS, Control systems, Maintenance, Power plant. See POWER PLANT, Maintenance, Control systems, Computers
- COMPUTERS, Control systems, Papermaking. See PAPER-MAKING, Control systems, Computers
- COMPUTERS, Control systems, Petroleum production. See PETROLEUM, Production, Control systems, Computers
- COMPUTERS, Control systems, Railways. See RAILWAYS, Control systems, Computers
- COMPUTERS, Control systems, Rolling mills, Steel, Strips. See STRIPS, Steel, Rolling, Mills, Control systems, Computers
- COMPUTERS, Control systems, Ships. See SHIPS, Control systems, Computers
- COMPUTERS, Control systems, Signals, Traffic roads. See ROADS, Traffic, Signals, Control systems, Computers
- COMPUTERS, Control systems, Soaking pits, Steel ingots. See INGOTS, Steel, Soaking pits, Control systems, Computers
- COMPUTERS, Control systems, Steel production. See STEEL, Production, Control systems, Computers
- COMPUTERS, Control systems, Warehouses. See WAREHOUSES, Control systems, Computers
- COMPUTERS, Costs**  
Measuring the profitability of a computer system. J. D. W. Jones. *Computer J.*, 5 (Jan 63) p.284-93. il. ref.
- COMPUTERS, Cryotrons**  
Cryotrons and cryotron circuits—a review. P. A. Walker. *Radio & Electronic Engng.*, 25 (May 63) p.387-97. il. refs.
- COMPUTERS, Decoders, Decimal-Binary**  
Simple decimal to binary decoder using relays. D. Nairn. *Electronic Engng.*, 35 (Apr 63) p.232-5. il.
- COMPUTERS, Design, Cams. See CAMS, Design, Computers



**COMPUTERS, Design, Computers**

Critical parthenogenesis. *Data & Control*, 1 (Nov 63) p.32+. il.

**COMPUTERS, Difference equations, Plate column calculations, Distillation.** See **DISTILLATION, Columns, Plate, Difference equations, Calculation, Computers**

**COMPUTERS, Differential equation solution, Energy loss, Impurity atoms, Plasmas.** See **PLASMAS, Impurity atoms, Energy loss, Differential equations, Solution, Computers**

**COMPUTERS, Doppler radar, Traffic control, Air transport.** See **AIR TRANSPORT, Traffic control, Radar, Doppler, Computers**

**COMPUTERS, Drug usage analysis.** See **DRUGS, Usage, Analysis, Computers**

**COMPUTERS, Education, Secondary schools**

Introduction of computing to schools. L. T. G. Clarke & V. E. Price. *Computer Bull.*, 7 (Sep 63) p.50-1

**COMPUTERS, Engineering design.** See **ENGINEERING, Design, Computers**

**COMPUTERS, Evaluation**

Estimating computer performance. J. A. Gosden. *Computer J.*, 5 (Jan 63) p.276-83. il. refs.

**COMPUTERS, Floating point arithmetic**

Multiple-precision floating-point interpretive program for the Control Data 1604. A. H. Stroud & D. Secrest. *Computer J.*, 6 (Apr 63) p.62-6. refs.

**COMPUTERS, Food processing.** See **FOOD, Processing, Computers**

**COMPUTERS, Fourier image calculation, Fresnel diffraction.** See **DIFFRACTION, Fresnel, Fourier images, Calculation, Computers**

**COMPUTERS, Gas-fired furnace design studies.** See **FURNACES, Gas-fired, Design, Studies, Computers**

**COMPUTERS, Government departments**

Which computers?—the TSU helps to find the answer. J. W. Freebody. *P.O. Telecommunications J.*, 15 (Summer 63) p.21-6. il.

**COMPUTERS, Great Britain**

Computer market. *Electronics Weekly* (19 Jun 63) p.7

**COMPUTERS, History**

Babbage, electronic computers and scales of notation. W. Phillips. *Computer Bull.*, 6 (Mar 63) p.128-30

**COMPUTERS, Information retrieval.** See **INFORMATION, Retrieval, Computers**

**COMPUTERS, Input units, Paper tape, Data transfer, Scalars**

On feeding computers from scalars. A. J. Oxley. *Electronic Engng.*, 35 (Dec 63) p.801-5. il. refs.

**COMPUTERS, Input units, Paper tape, Reading systems**

Design of a paper tape reader. D. A. Savory. *Brit. Communications & Electronics*, 10 (Jan 63) p.24-9. il.

**COMPUTERS, Inspection, Typewriter manufacture.** See **TYPEWRITERS, Manufactures, Inspection, Computers**

**COMPUTERS, Investment selection.** See **INVESTMENTS, Selection, Computers**

**COMPUTERS, Job analysis.** See **JOB ANALYSIS, Computers**

**COMPUTERS, Logical elements**

Logical parts of a control system. M. Lancaster. *Data & Control*, 1 (Jun 63) p.16-19. il.

**COMPUTERS, Logical elements, Diodes, Tunnel**

Tunnel-diode computer stores. P. M. Thompson. *Industrial Electronics*, 1 (Mar 63) p.303-6. il.

Tunnel diode storage system with non-destructive read-out. D. B. G. Edwards & M. J. Lanigan. *Radio & Electronic Engr.*, 26 (Nov 63) p.359-72. il. refs.

**COMPUTERS, Logical elements, Education, Instructional apparatus**

Instructional aid for digital computer logic. G. J. Lingwood & R. H. Grigg. *Radio & Electronic Engr.*, 25 (Apr 63) p.335-52. il. refs.

**COMPUTERS, Logical elements, Oscillators, Phase-locked**

Experimental investigation into the operation of the parametric phase-locked oscillator. K. W. Beer. *Radio & Electronic Engr.*, 25 (May 63) p.432-40. il. refs.

Microwave parametric oscillators for computers. D. M. Connah. *Electronic Engng.*, 35 (Sep 63) p.582-6. il. refs.

**COMPUTERS, Logical elements, Testing, Computers**

Checking of computer logic by simulation on a computer. M. Lehman, R. Eshed & Z. Netter. *Computer J.*, 6 (Jul 63) p.154-62. il. refs.

**COMPUTERS, Marks processing, Examinations, Technical education.** See **TECHNICAL EDUCATION, Examinations, Marks, Processing, Computers**

**COMPUTERS, Mass spectrometers, Analysis, Lithium isotopes.** See **LITHIUM, Isotopes, Analysis, Mass spectrometers, Computers**

**COMPUTERS, Module units**

Development of ARCH—a hybrid analogue—digital system of computers for industrial control. G. B. Cole & S. L. H. Clarke. *Radio & Electronic Engr.*, 26 (Jul 63) p.45-58. il.

**COMPUTERS, Movement recording, Railway wagons.** See **RAILWAYS, Wagons, Movement recording, Computers**

**COMPUTERS, Nuclear reactor research.** See **NUCLEAR REACTORS, Research, Computers**

**COMPUTERS, Operators, Technical education**

Beware, the computer surely cometh [British Conference on Automation and Computation "Education and training for automation and computation"] *Engineering*, 195 (12 Apr 63) p.518-19

Rethinking DP training. *Data & Control*, 1 (Sep 63) p.27+

**COMPUTERS, Output units, X-Y plotters**

Survey of X-Y plotters. P. A. R. Wright. *Brit. Communications & Electronics*, 10 (Oct 63) p.782-7

**COMPUTERS, Output units, Xerography**

Xeronic printer can cope with computer output [Rank Data Systems Division] I. D. Brotherton. *Electronics Weekly*, (16 Oct 63) p.7. il.

**COMPUTERS, Picture arithmetic**

"Picture logic" for "Bacchus" a fourth-generation computer. L. A. Edelstein. *Computer J.*, 6 (Jul 63) p.144-53. il. refs.

**COMPUTERS, Process control, Chemical engineering.** See **CHEMICAL ENGINEERING, Control systems, Computers**

**COMPUTERS, Production control.** See **PRODUCTION, Control, Computers**

**COMPUTERS, Production control, Motor car manufacture.** See **MOTOR CARS, Manufactures, Production control, Computers**

**COMPUTERS, Production control, Shoe manufactures.** See **SHOES, Manufactures, Production control, Computers**

**COMPUTERS, Production control, Transmissions, Motor cars.** See **MOTOR CARS, Transmissions, Production control, Computers**

**COMPUTERS, Programs**

Computer programming today. S. Gill. *New Scientist*, 20 (31 Oct 63) p.272-4. il.

Extended autocode for Pegasus. W. Barrett & A. J. Mitchell. *Computer J.*, 6 (Oct 63) p.237-40. refs.

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Programming standards cut staff movement costs. J. Diebold. *Data & Control*, 1 (Feb 63) p.28-9

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**COMPUTERS, Programs—cont.**

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You, too, can write computer programmes. *Times Rev. of Industry & Technology* (May 63) p.83-5. il.

**COMPUTERS, Programs, Education, Secondary**

Programming for pedagogues. *Data & Control*, 1 (Dec 63) p.22

**COMPUTERS, Programs, Errors**

Techniques for program error diagnosis on EDSAC 2. D. W. Barron & D. F. Hartley. *Computer J.*, 6 (Apr 63) p.44-9. refs.

**COMPUTERS, Programs, Languages**

Software in the 70's. J. Diebold. *Data & Control*, 1 (Jun 63) p.24-5

**COMPUTERS, Programs, Languages, Algol 60**

Elliott ALGOL input/output system. C. A. R. Hoare. *Computer J.*, 5 (Jan 63) p.345-7. refs.

Hardware representation for ALGOL 60 using Creed teleprinter equipment. J. M. Gerard & A. Sambles. *Computer J.*, 5 (Jan 63) p.338-40. il. refs.

Input and output for ALGOL 60 on KDF 9. F. G. Duncan. *Computer J.*, 5 (Jan 63) p.341-4. refs.

Realization of ALGOL procedures and designational expressions. J. M. Watt. *Computer J.*, 5 (Jan 63) p.332-7. refs.

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What everybody should know about ALGOL. B. Higman. *Computer J.*, 6 (Apr 63) p.50-6. refs.

**COMPUTERS, Programs, Languages, CPL**

Main features of CPL. D. W. Barron, J. N. Buxton, D. F. Hartley, E. Nixon & C. Strachey. *Computer J.*, 6 (Jul 63) p.134-43. refs.

**COMPUTERS, Programs, Languages, Cobol**

Computer language myth. F. Kirch. *Data & Control*, 1 (Jul 63) p.28-30

**COMPUTERS, Programs, Languages, Fact**

How is 'FACT' getting on? J. C. Harwell. *Computer Bull.*, 6 (Mar 63) p.137-8

**COMPUTERS, Programs, Languages, Reverse Polish notation**

Note on coding Reverse Polish expressions for single-address computers with one accumulator. A. J. T. Colin. *Computer J.*, 6 (Apr 63) p.67-8

**COMPUTERS, Programs, Languages, TALK**

Language problem. *Electronics Weekly* (29 May 63) p.7. il.

**COMPUTERS, Programs, P.E.R.T.**

How to break the programming bottleneck. A. Hales. *Data & Control*, 1 (Aug 63) p.16-19. il.

COMPUTERS, Programs, Simulators, Learning machines, Noughts & crosses. See **NOUGHTS & CROSSES**, Learning machines, Simulators, Computers, Programs

**COMPUTERS, Programs, Simultaneous operation**

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Time sharing on LEO III. J. W. Lewis. *Computer J.*, 6 (Apr 63) p.24-8

COMPUTERS, Quantity surveying. See **QUANTITY SURVEYING**, Computers

COMPUTERS, Radar, Traffic control, Air transport. **AIR**

**TRANSPORT**, Traffic control, Radar, Computers

COMPUTERS, Railways. See **RAILWAYS**, Computers

COMPUTERS, Road design. See **ROADS**, Design, Computers

COMPUTERS, Road traffic flow. See **ROADS**, Traffic, Flow, Computers

COMPUTERS, Route planning, Ships. See **SHIPS**, Route planning, Computers

COMPUTERS, Scheduling, Production management. See **PRODUCTION**, Management, Scheduling, Computers

COMPUTERS, Shipbuilding. See **SHIPBUILDING**, Computers

COMPUTERS, Simulation, Genetics, Populations. See **POPULATIONS**, Genetics, Simulation, Computers

COMPUTERS, Simulators, Chemical engineering plant. See **CHEMICAL ENGINEERING**, Plant, Simulators, Computers

COMPUTERS, Simulators, Machinery maintenance. See **MACHINERY**, Maintenance, Simulators, Computers

COMPUTERS, Simulators, Traffic, Flow, T-junctions, Roads. See **ROADS**, T-junctions, Traffic, Flow, Simulation, Computers

COMPUTERS, Simulators, Traffic, Telephony. See **TELEPHONY**, Traffic, Simulators, Computers

**COMPUTERS, Standards**

Current position of standards work relating to computers. H. McG. Ross. *Computer Bull.*, 6 (Mar 63) p.133-5

COMPUTERS, Storage, Drawings. See **DRAWINGS**, Storage, Computers

COMPUTERS, Storage, Functions. See **FUNCTIONS**, Storage, Computers

**COMPUTERS, Storage units**

Computer storage systems. C. N. W. Litting. *Radio & Electronic Components*, 4 (Feb 63) p.109-15. il. refs.

Research at R.R.E., no.4: a survey of techniques used in memory devices. M. Barraclough. *Brit. Communications & Electronics*, 10 (Dec 63) p.920-5. il. refs.

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**COMPUTERS, Storage units, Delay lines, Quartz**

Ultrasonic delay-line store operating at 5 Mc/s digit rate. C. F. Brockelsby, J. S. Palfreeman & T. W. Woods. *Electronic Engng.*, 35 (May 63) p.308-12. il.

**COMPUTERS, Storage units, Ferrite cores**

Ferrite core memories and the design of digital data systems. G. C. Ziman. *Brit. Communications & Electronics*, 10 (Jul 63) p.538-42. il.

Ferrite-core stores. P. Cooke. *J. of Instn. of Electrical Engrs.*, 9 (Aug 63) p.345-8. il.

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**COMPUTERS, Storage units, Magnetic films**

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Magnetic films for storing information in computers. R. C. Kell. *G.E.C. Journal*, 30 No.1 (1963) p.18-21. il. refs.

**COMPUTERS, Storage units, Magnetic tape**

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**COMPUTERS, Structural engineering.** See STRUCTURAL ENGINEERING, Computers

**COMPUTERS, Summation, Fourier series.** See FOURIER SERIES, Summation, Computers

**COMPUTERS, Surveys, Transport, Commuters.** See COMMUTERS, Transport, Surveys, Computers

**COMPUTERS, Time study.** See TIME STUDY, Computers

**COMPUTERS, Traffic control, Air transport.** See AIR TRANSPORT, Traffic control, Computers

**COMPUTERS, Traffic engineering.** See TRAFFIC ENGINEERING, Computers

**COMPUTERS, Traffic surveys, Roads.** See ROADS, Traffic, Surveys, Computers

**COMPUTERS, Train schedule delay studies.** See RAILWAYS, Schedules, Delays, Studies, Computers

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**CONCENTRATION, Iron ores.** See IRON, Ores, Concentration

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**CONCRETE**

Related Headings:  
CEMENT

**CONCRETE—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Research**Properties**Strength*

*Strain gauges*

*Stress-strain relationships*

*Young's modulus*

*Poisson's ratio*

*Creep*

*Shrinkage*

*Thermal conductivity*

*Technical activities**Mixing*

*Mixers*

*Mixes*

*Finishing**Testing**Inspection**Drilling**Materials**Additives**Aggregates**Sand*

*Set retarding agents*

*Kinds of concrete by process**Ready mixed**Lightweight**Gas**Vibrated**Reinforced**Prestressed**Pretensioning**Kinds of concrete by material**Plastics bonded**Epoxy resin**Kinds of concrete by function**Waterproof**Heat-resistant**Applications**Building materials**Application in special conditions**Winter**Antiquities**Roman***CONCRETE, Additives**

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**CONCRETE, Additives, Glass fibre**

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**CONCRETE, Additives, Lignosulphonates**

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**CONCRETE, Aggregates, Moisture movement**

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**CONCRETE, Asymmetrical spiral staircases. See STAIRCASES, Spiral, Asymmetrical, Concrete****CONCRETE, Beams. See BEAMS, Concrete****CONCRETE, Beams, Frames, Structures. See STRUCTURES, Frames, Beams, Concrete****CONCRETE, Blocks. See BLOCKS, Concrete****CONCRETE, Boats. See BOATS, Concrete****CONCRETE, Building materials**

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**CONCRETE, Dams. See DAMS, Concrete****CONCRETE, Drilling, Core, Diamond**

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**CONCRETE, Epoxy resin**

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**CONCRETE, Exhibition buildings. See EXHIBITION BUILDINGS, Concrete****CONCRETE, Exhibition structures. See EXHIBITION STRUCTURES, Concrete****CONCRETE, External walls, Office buildings. See OFFICE BUILDINGS, Walls, External, Concrete****CONCRETE, Finishing**

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**CONCRETE, Flanged beams. See BEAMS, Flanged, Concrete****CONCRETE, Floors. See FLOORS, Concrete****CONCRETE, Flyovers. See FLYOVERS, Concrete****CONCRETE, Gas, Hydrogen peroxide**

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**CONCRETE, Lightweight, Floors. See FLOORS, Concrete, Lightweight****CONCRETE, Lightweight, Shell domes. See DOMES, Shell, Concrete, Lightweight****CONCRETE, Lightweight, Structures. See STRUCTURES, Concrete, Lightweight****CONCRETE, Lightweight aggregate, Structures. See STRUCTURES, Concrete, Lightweight aggregate****CONCRETE, Mixers**

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**CONCRETE, Mixes, Consistency-water relationships**

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**CONCRETE, Mixing**

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**CONCRETE, Mixing, Proportioning, Equipment**

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**CONCRETE, Murals. See MURALS, Concrete****CONCRETE, Open circular tanks. See TANKS, Circular, Open, Concrete****CONCRETE, Panels, Flats. See FLATS, Panels, Concrete****CONCRETE, Permanent way equipment. See PERMANENT WAY, Equipment, Concrete****CONCRETE, Piles. See PILES, Concrete****CONCRETE, Piles, Basins, Yachts. See YACHTS, Basins, Piles, Concrete****CONCRETE, Pipelines. See PIPELINES, Concrete****CONCRETE, Pipes. See PIPES, Concrete****CONCRETE, Plastics bonded**

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**CONCRETE, Post-tensioned, Beams. See BEAMS, Concrete, Post-tensioned****CONCRETE, Precast, Balconies, Flats. See FLATS, Balconies, Concrete, Precast****CONCRETE, Precast, Beams. See BEAMS, Concrete, Precast****CONCRETE, Precast, Buildings. See BUILDINGS, Concrete, Precast****CONCRETE, Precast, Churches. See CHURCHES, Concrete, Precast****CONCRETE, Precast, Cladding, Buildings. See BUILDINGS, Cladding, Concrete, Precast****CONCRETE, Precast, Columns. See COLUMNS, Concrete, Precast****CONCRETE, Precast, Farm buildings. See FARM BUILDINGS, Concrete, Precast****CONCRETE, Precast, Flats. See FLATS, Concrete, Precast****CONCRETE, Precast, Frameworks, Roofs, Factories. See FACTORIES, Roofs, Frameworks, Concrete, Precast****CONCRETE, Precast, Housing. See HOUSING, Concrete, Precast****CONCRETE, Precast, Panels, Houses. See HOUSES, Panels, Concrete, Precast****CONCRETE, Precast, Rings, Manholes, Sewers. See SEWERS, Manholes, Rings, Concrete, Precast****CONCRETE, Precast, Schools. See SCHOOLS, Concrete, Precast****CONCRETE, Precast, Shell roofs, Industrial buildings. See INDUSTRIAL BUILDINGS, Roofs, Shell, Concrete, Precast****CONCRETE, Precast, Silage silos. See SILOS (Silage) Concrete, Precast****CONCRETE, Precast, Technical colleges. See TECHNICAL COLLEGES, Concrete, Precast**



CONCRETE, Precast, Vertical car parks. See CAR PARKS, Vertical, Concrete, Precast

CONCRETE, Precast, Walls, Buildings. See BUILDINGS, Walls, Concrete, Precast

CONCRETE, Precast prestressed, Exhibition buildings. See EXHIBITION BUILDINGS, Concrete, Prestressed, Precast

CONCRETE, Precast reinforced, Bars, Roofs, Factories. See FACTORIES, Roofs, Bars, Concrete, Precast, Reinforced

CONCRETE, Prefabricated, Enclosures, Suppression, Noise, Transformers. See TRANSFORMERS, Noise, Suppression, Enclosures, Concrete, Prefabricated

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CONCRETE, Prestressed, Beams, Bridges. See BRIDGES, Beams, Concrete, Prestressed

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CONCRETE, Prestressed, Frames, Office buildings. See OFFICE BUILDINGS, Frames, Concrete, Prestressed

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CONCRETE, Prestressed, Roads. See ROADS, Concrete, Prestressed

CONCRETE, Prestressed, Roofs, Exhibition buildings. See EXHIBITION BUILDINGS, Roofs, Concrete, Prestressed

CONCRETE, Prestressed, Sections. See SECTIONS, Concrete, Prestressed

CONCRETE, Prestressed, Slabs, Bridges. See BRIDGES, Slabs, Concrete, Prestressed

CONCRETE, Prestressed, Sleepers, Rails, Permanent way. See PERMANENT WAY, Rails, Sleepers, Concrete, Prestressed

#### CONCRETE, Prestressed, Stresses, Measurement, Instruments, Photoelastic

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CONCRETE, Prestressed, Warehouses. See WAREHOUSES, Concrete, Prestressed

#### CONCRETE, Pretensioning, Beds

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#### CONCRETE, Ready-mixed, Production, Plant, Floating

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#### CONCRETE, Reinforced, Aggregates, Grading

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Active area of ribbed steel bars for reinforced concrete. N. P. Roberts. Structural Concrete, 1 (Jan/Feb 63) p.311-18. il. refs.

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#### CONCRETE, Reinforced, Boring, Thermic

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CONCRETE, Reinforced, Floors. See FLOORS, Concrete, Reinforced

- CONCRETE, Reinforced, Frames, Structures.** See **STRUCTURES, Frames, Concrete, Reinforced**
- CONCRETE, Reinforced, Hulls, Motor boats.** See **BOATS, Motor, Hulls, Concrete, Reinforced**
- CONCRETE, Reinforced, Inverts, Tunnels, Railways.** See **RAILWAYS, Tunnels, Inverts, Reinforced concrete**
- CONCRETE, Reinforced, Portal grillages, Boiler houses, District heating.** See **DISTRICT HEATING, Boiler houses, Grillages, Portal, Concrete, Reinforced**
- CONCRETE, Reinforced, Precast, Industry, Russia**  
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- CONCRETE, Reinforced, Rectangular columns.** See **COLUMNS, Rectangular, Concrete, Reinforced**
- CONCRETE, Reinforced, Reinforcement, Bonding**  
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- CONCRETE, Reinforced, Reinforcement, Corrosion, Calcium chloride**  
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- CONCRETE, Reinforced, Roofs, Swimming baths.** See **SWIMMING BATHS, Roofs, Concrete, Reinforced**
- CONCRETE, Reinforced, Sections.** See **SECTIONS, Concrete, Reinforced**
- CONCRETE, Reinforced, Shielding, Nuclear reactors.** See **NUCLEAR REACTORS, Shielding, Concrete, Reinforced**
- CONCRETE, Reinforced, Slabs.** See **SLABS, Concrete, Reinforced**
- CONCRETE, Reinforced, Staircases.** See **STAIRCASES, Concrete, Reinforced**
- CONCRETE, Reinforced, Steel, Corrosion, Effect of micro-cracks**  
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- CONCRETE, Reinforced, Structures.** See **STRUCTURES, Concrete, Reinforced**
- CONCRETE, Reinforced, Thermal stresses, Calculations**  
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- CONCRETE, Reinforced, Water towers.** See **WATER, Towers, Concrete, Reinforced**
- CONCRETE, Research**  
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- CONCRETE, Roman**  
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- CONCRETE, Sand, Determination of organic materials**  
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- CONCRETE, Set retarding agents, Effect of mixing sequences**  
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- CONCRETE, Sewers.** See **SEWERS, Concrete**
- CONCRETE, Shell roofs.** See **ROOFS, Shell, Concrete**
- CONCRETE, Shell roofs, Schools.** See **SCHOOLS, Roofs, Shell, Concrete**
- CONCRETE, Shell roofs, Terminal buildings, Airports.** See **AIRPORTS, Terminal buildings, Roofs, Shell, Concrete**
- CONCRETE, Shielding, Nuclear reactors.** See **NUCLEAR REACTORS, Shielding, Concrete**
- CONCRETE, Shrinkage, Effect of cement, Particle size**  
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- CONCRETE, Slabs, Decks, Bridges.** See **BRIDGES, Decks, Slabs, Concrete**
- CONCRETE, Slabs, Surfaces, Yards, Dairies.** See **DAIRIES, Yards, Surfaces, Slabs, Concrete**
- CONCRETE, Square tanks.** See **TANKS, Square, Concrete**
- CONCRETE, Strain gauges, Vibrating wire**  
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- CONCRETE, Structures, Railways.** See **RAILWAYS, Structures, Concrete**
- CONCRETE, Tall buildings.** See **BUILDINGS, Tall, Concrete**
- CONCRETE, Testing**  
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- CONCRETE, Water towers.** See **WATER, Towers, Concrete**
- CONCRETE, Waterproof, Polyethylsiloxane**  
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- CONCRETE ENCASED STEEL, Columns.** See **COLUMNS, Steel, Encased, Concrete**



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CONDENSATION, Water, Gold surfaces. See GOLD, Surfaces, Water, Condensation

CONDENSATION, Windows. See WINDOWS, Condensation

CONDENSATION COEFFICIENT, Steam. See STEAM, Condensation coefficient

CONDENSER MICROPHONES. See MICROPHONES, Condenser

CONDENSER MICROPHONES, Sound measurement. See

SOUND, Measurement, Microphones, Condenser

CONDENSER SPINNING, Woollen yarns. See YARNS, Woollen, Spinning, Condenser

CONDENSERS, Steam. See STEAM, Condensers

#### CONDENSERS (Steam plant) Droplet promoters, Montan wax

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CONDUCTIVE FLAMES. See FLAMES, Conductive

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CONDUCTIVITY, Thermal, Alkaline earth oxides. See ALKALINE EARTH OXIDES, Thermal conductivity

CONDUCTIVITY, Thermal, Analysis. See THERMAL CONDUCTIVITY ANALYSIS

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CONDUCTIVITY, Thermal, Concrete. See CONCRETE, Thermal conductivity

CONDUCTIVITY, Thermal, Electrically stressed transformer oils. See TRANSFORMERS, Oil, Electrically stressed, Thermal conductivity

CONDUCTIVITY, Thermal, Mixtures, Gases. See GASES, Mixtures, Thermal conductivity

CONDUCTIVITY, Thermal, Neutron irradiated graphite. See GRAPHITE, Irradiated (Neutrons) Thermal conductivity

CONDUCTIVITY, Thermal, Single crystals, Gallium. See GALLIUM, Crystals, Single, Thermal conductivity

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**CONTAINERS**

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BAGS  
BINS  
BOTTLES  
BOXES  
BUNKERS  
CANS  
CARTONS  
CASKS  
CRATES  
DRUMS  
POUCHES

## CONTAINERS

Related Headings—cont.

SACHETS

SACKS

STILLAGES

TANKS

VESSELS

CONTAINERS, Aluminium, Freight. See FREIGHT, Containers, Aluminium

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CONTAINERS, Dangerous chemicals. See CHEMICALS, Dangerous, Containers

CONTAINERS, Deuterium, Nuclear fusion. See NUCLEAR FUSION, Deuterium, Containers

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CONTAINERS, Food. See FOOD, Containers

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CONTINUOUS ANNEALING, Steel strips. See STRIPS, Steel, Annealing, Continuous

CONTINUOUS ANNEALING, Tinplate. See TINPLATE, Annealing, Continuous

CONTINUOUS BEAMS. See BEAMS, Continuous

CONTINUOUS BREWING. See BREWING, Continuous

CONTINUOUS CASTING, Aluminium, Strips, Tubes. See TUBES, Strips, Aluminium, Casting, Continuous

CONTINUOUS CASTING, Copper. See COPPER, Casting, Continuous



- CONTINUOUS CASTING, Copper alloys, Billets. See BILLETS, Copper, Alloy, Casting, Continuous
- CONTINUOUS CASTING, Copper alloys, Slabs. See SLABS, Copper, Alloys, Casting, Continuous
- CONTINUOUS CASTING, Steel. See STEEL, Casting, Continuous
- CONTINUOUS CASTING, Steel slabs. See SLABS, Steel, Casting, Continuous
- CONTINUOUS RATING, Diesel locomotives. See LOCOMOTIVES, Diesel, Continuous rating
- CONTINUOUS STATIONERY. See STATIONERY, Continuous
- CONTINUOUS VERTICAL RETORTS, Town gas production. See GAS (Town) Production, Retorts, Continuous, Vertical
- CONTINUOUS WAVE RADAR. See RADAR, Continuous wave
- CONTINUOUS WAVES, Electron density measurement, Ionosphere. See IONOSPHERE, Electron density measurement, Continuous waves
- CONTOUR ENVELOPES, Charts, Safety, Aircraft. See AIRCRAFT, Safety, Charts, Contour envelopes
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- CONTRACTS, Building. See BUILDING, Contracts
- CONTRACTS, Civil engineering. See CIVIL ENGINEERING, Contracts
- CONTRAST, Photography. See PHOTOGRAPHY, Contrast
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- CONTROL, Remote**  
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- CONTROL, Remote, Cranes. See CRANES, Control, Remote
- CONTROL, Remote, Diesel engines, Ships. See SHIPS, Diesel engines, Control, Remote
- CONTROL, Remote, Doors, Garages. See GARAGES, Doors, Control, Remote
- CONTROL, Remote, Engines, Fishing vessels. See FISHING, Vessels, Engines, Control, Remote
- CONTROL, Remote, Handling, Cargoes, Tankers, Ships. See TANKERS, Ships, Cargoes, Handling, Remote control
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- CONTROL, Remote, Power substations. See POWER SUBSTATIONS, Control, Remote
- CONTROL, Remote, Radio, Models. See MODELS, Remote control, Radio
- CONTROL, Remote, Steam turbines, Tankers, Ships. See TANKERS, Ships, Steam turbines, Control, Remote
- CONTROL, Remote, Town gas production. See GAS (Town) Production, Control, Remote
- CONTROL, Remote, Valves, Tankers, Ships. See TANKERS, Ships, Valves, Control, Remote
- CONTROL, Temperature, Heating, Houses. See HOUSES, Heating, Temperature control
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## CONTROL SYSTEMS

## Related Headings:

ACTUATORS  
CYBERNETICS  
GOVERNORS  
HALL GENERATORS  
POSITIONING CONTROL  
PROGRAMMERS  
SERVO VALVES  
SERVOMECHANISMS  
SHAPE RECOGNITION MACHINES  
SWITCHES, Proximity  
SYNCHRO-RECEIVERS

## CONTROL SYSTEMS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following*

*Engineers*  
*Operators*

*Costs*

*Particular localities*  
*Russia*

*Analysis*  
*Measurements*  
*Theory*  
*Pontrjagin's principle*  
*Response*

CONTROL SYSTEMS—SUBHEADINGS—Synopsis—*cont.*

*Frequency response*  
*Time response*  
*Stability*  
*Hill climbing*  
*Contraction mapping*

## Manufactures

## Components

*Instruments*  
*Rotameters*  
*Amplifiers*  
*Phase advance networks*  
*Switching circuits*  
*Logical elements*  
*Computers*  
*Rectifiers*  
*Valves*

## Kinds of control systems

## Module units

## Fluid

*Fluid jet*  
*Hydraulic*  
*Pneumatic*  
*Electro-hydraulic*  
*Mechanical*  
*Ultrasonic*

## Non-linear

*Adaptive*  
*Relay*  
*Time dependent*  
*Discontinuous*  
*Sampled data*

## Applications

*Mechanical engineering*  
*Mechanical handling*  
*Conveyors*  
*Fork trucks*  
*Gears*  
*Boilers*  
*Machine tools*  
*Lathes*  
*Jig borers*  
*Air conditioning*  
*Electrical engineering*  
*Electrical machinery*  
*Electric motors*  
*Electric power systems*  
*Nuclear power stations*  
*Nuclear reactors*  
*Transport*  
*Railways*  
*Ships*  
*Trawlers*  
*Pipelines*  
*Bakeries*  
*Dairies*  
*Warehouses*  
*Missiles*  
*Laboratory equipment*  
*Printing*  
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REFRIGERATION

REFRIGERATORS

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**CREEP, Concrete.** See **CONCRETE, Creep**

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**CREEP, Effect on strain, Pipes.** See **PIPES, Strain, Effect of creep**

**CREEP, Embrittlement, Metals.** See **METALS, Embrittlement, Creep**

**CREEP, Isotactic polypropylene.** See **POLYPROPYLENE, Isotactic, Creep**

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**CREEP, Nickel.** See **NICKEL, Creep**

**CREEP, Nickel alloys.** See **NICKEL, Alloys, Creep**

**CREEP, Niobium.** See **NIOBIUM, Creep**

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**CREEP, Precipitation hardened metals.** See **METALS, Precipitation hardened, Creep**

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ALDOL

ANILINE

ANILINE ACETATE

AROMATIC COMPOUNDS

ASCORBIC ACID

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## CYCLIC COMPOUNDS

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BENZENE-CYCLOPENTANE

BENZOIC ACIDS

BENZOLE

3:4-BENZOPYRENE

BENZYL AKYLAMINE

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CYCLOHEXANOL

CYCLOHEXANONE

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CYCLOPENTANE

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NAPHTHENATES

NITRO-COMPOUNDS, Cyclic

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PERFLUORO-1,2-DIMETHYLCYCLOHEXANE

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PHENOL

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PHENOXY GROUPS

1-PHENYL-4-CINNOLONES

o-PHENYLPHENOL

PTHALIC ANHYDRIDE

PHYTIC ACID

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**DIESEL ENGINES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following*

**Research****Properties**

*Stresses*

*Vibrations*

*Temperatures*

*Cooling*

**Problems**

*Wear*

**Processes**

*Combustion*

*Firing intervals*

*Air consumption*

*Exhaust*

*Scavenging*

**Technical activities**

*Manufactures*

*Operation*

*Running-in*

**Parts**

*Cylinders*

*Combustion cups*

*Pistons*



**DIESEL ENGINES—SUBHEADINGS—Synopsis—cont.**

- Crankcases
- Crankshafts
- Connecting rods
- Fuel injection pumps
- Control systems
  - Governors
- Turbochargers
- Feed materials
  - Fuels
  - Lubricating oil
- Kinds of diesel engines
  - Air cooled
  - Loop scavenge
  - Compound
- Applications
  - Generators, Electrical
  - Alternators
  - Motor vehicles
    - Motor cars
    - Commercial vehicles
      - Buses
      - Lorries
    - Excavators
  - Railway vehicles
    - Locomotives
  - Marine
    - Ships
      - Tankers
      - Destroyers
      - Fishing vessels
      - Trawlers
    - Launches
    - Motor boats
    - Fireboats
    - Yachts

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## ELECTRIC POWER SYSTEMS

Related Headings:

POWER DISTRIBUTION

POWER STATIONS

POWER SUBSTATIONS

POWER TRANSMISSION

## ELECTRIC POWER SYSTEMS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Particular countries

*Great Britain*

*England*

*Tees-Side*

*Scotland*

*Ireland*

*Europe*

*France*

*West Germany*

*Sweden*

*Yugoslavia*

*Russia*

*Asia*

*East Pakistan*

*Malaya*

*Africa*

*East Africa*

*North America*

*Canada*

*Ontario*

*U.S.A.*

## ELECTRIC POWER SYSTEMS—SUBHEADINGS—

*Synopsis—cont.*

*South America*

*New Zealand*

*Underdeveloped countries*

Costs

Education

Research

Problems

*Accidents*

*Faults*

*Disturbances*

*Stability*

*Overvoltages*

*Travelling waves*

*Load-Frequency variation*

Technical activities

*Analysis*

*Design*

*Protection*

*Peak loading*

*Phase indication*

Equipment

*Control systems*

*Alarms*

*Switching circuits*

*Electrical machinery*

*Insulators*

Operation under special conditions

*Winter*

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- ARCS
- CORONA
- GAS DISCHARGE
- GLOW DISCHARGE
- LIGHTNING
- SPARK DISCHARGE

ELECTRICAL DISCHARGE, Ignition, Firedamp, Coal mining.  
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A.C.  
AIR GAPS  
CAPACITANCE  
CIRCUITS, Electric  
COMMUNICATIONS, Engineering  
CONDUCTANCE  
CURRENT  
D.C.  
EARTHING  
EDDY CURRENT  
ELECTRIC POWER SYSTEMS  
ELECTROMAGNETIC WAVES  
ELECTRONICS  
IMPEDANCE  
IMPEDANCE FUNCTIONS  
INDUCTANCE  
NETWORKS, Electrical  
PHASE ANGLE  
PIEZOELECTRICITY  
POWER PLANT  
POWER SUPPLIES  
RESISTANCE  
RESISTIVITY  
SPARK GAPS  
SWITCHING  
THERMOELECTRICITY  
TRANSMISSION LINES  
VACUUM, Gaps  
VOLTAGE

**ELECTRICAL ENGINEERING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Particular countries

*Great Britain*  
*Switzerland*  
*India*  
*Australia*

Profession

*Technicians*

Education

*Apprenticeships*

Research

*Laboratories*

*Standards*

**ELECTRICAL ENGINEERING—SUBHEADINGS—cont.**

*Transients*

*Materials*

*Components*

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BATTERIES  
CAPACITORS  
CHOPPERS  
CONDUCTORS, Electrical  
CONTACTS, Electrical  
CONVERTERS  
ELECTRODES  
ELECTROMAGNETS  
FUSE-SWITCHES  
FUSES  
IMPULSES, Voltage, Generators  
INDUCTORS  
INSULATORS  
INVERTERS  
MAGNETS  
RECTIFIERS  
RESISTORS  
SWITCHES  
SWITCHGEAR  
TRANSFORMERS  
TRANSISTORS, Power  
WIRES, Enamelled  
WIRES, Insulated  
WIRING, Preformed

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 COATINGS, Conductive  
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**ELECTRICAL EQUIPMENT, Mining, Coal.** See COAL, Mining, Electrical equipment

**ELECTRICAL EQUIPMENT, Motor boats.** See BOATS, Motor, Electrical equipment

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A.C., Machines  
ARMATURES  
BRUSHES, Carbon  
D.C., Machines  
ELECTRIC MOTORS  
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MICROPHONES  
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ANODES, Tellurium, Oxidation, Caustic soda solutions, Electrolysis  
ANODES, Tin, Potassium chromate solutions, Electrolysis  
ANODES, Tin, Sodium borate solutions, Electrolysis  
BARIUM CHLORIDE-CALCIUM CHLORIDE-ZIRCONIUM TETRAFLUORIDE, Electrolysis  
CADMIUM CHLORIDE-POTASSIUM CHLORIDE, Molten, Electrolytes  
CATHODES, Indium, Electrolysis  
CATHODES, Mercury, Double layer  
CATHODES, Mercury, Inhibitors, Electrolysis  
CATHODES, Mercury, Potassium halide solutions, Electrolysis  
CATHODES, Palladium, Oxygen reduction, Rate, Electrolysis  
CATHODES, Platinum, Oxygen reduction, Rate, Electrolysis  
CATHODES, Silver, Oxygen reduction, Rate, Electrolysis  
CATHODES, Steel, High tensile, Electrolysis  
CATHODES, Tin, Potassium hydroxide electrolytes  
COBALTOUS HALIDES-ACETONITRILE, Electrolytes  
ELECTRODEPOSITION  
ELECTRODES, Adsorption pseudo-capacitance  
ELECTRODES, Amalgam, Electrolysis  
ELECTRODES, Cadmium, Crystals, Single, Cadmium acetate solutions, Ion diffusion, Electrolysis  
ELECTRODES, Cadmium, Molten chloride electrolytes  
ELECTRODES, Chromium, Passivation  
ELECTRODES, Circulating electrolytes  
ELECTRODES, Gold Thiourea adsorption, Electrolysis

#### ELECTROLYSIS

Related Headings—cont.

ELECTRODES, Hydrogen overvoltage  
ELECTRODES, Iron, Armco, Acid solutions  
ELECTRODES, Lead oxides, Sulphuric acid electrolytes  
ELECTRODES, Manganese dioxide, Electrolysis  
ELECTRODES, Metal-metal-ion  
ELECTRODES, Nickel, Porous  
ELECTRODES, Nickel, Rotating disc, Coumarin electrolytes  
ELECTRODES, Passivation, Secondary, Electrolysis  
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ELECTRODES, Platinum, Impedance, A.C., Chlorine-Chloride electrolytes  
ELECTRODES, Platinum, Molten salt electrolytes  
ELECTRODES, Platinum, Platinized  
ELECTRODES, Platinum, Oxygen, Chemisorption, Electrolysis  
ELECTRODES, Platinum, Sulphuric acid solutions, Electrolysis  
ELECTRODES, Porous, Circulating electrolytes  
ELECTRODES, Porous, Current distribution  
ELECTRODES, Powders, Electrolysis  
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ELECTRODES, Reference  
ELECTRODES, Silver, Aqueous solutions, Electrolysis  
ELECTRODES, Silver, Electrolysis  
ELECTRODES, Silver nitrate, Dendrite growth, Sodium nitrate-potassium nitrate electrolytes  
ELECTRODES, Steel, Stainless, Chloride solutions, Polarisation  
ELECTRODES, Steel, Stainless, Polarisation  
ELECTRODES, Thallium, Perchloric acid electrolytes  
ELECTRODES, Thallium, Sodium hydroxide electrolytes  
ELECTRODES, Zinc, Crystals, Single, Sulphate solutions, Ion diffusion, Electrolysis  
ELECTRODES, Zinc amalgam, Electrolysis  
ELECTROFORMING  
GAUZE, Platinum, Mass transfer, Electrolytes, Ferri-cyanide-Ferrocyanide  
IRON, Liquid, Sulphur removal, Electrolysis  
NITROBENZENE-WATER, Solvents, Electrolytes  
POTENTIOSTATS  
RUTILE, Conductivity, Effect of hydrogen diffusion, Electrolysis  
SALTS, Molten, Electrolytes  
SILVER, Corrosion, Alkali carbonates, Molten, Electrolytes  
SILVER HALIDES, Molten, Electrolysis  
SOLUTIONS, Aqueous, Electrolytes  
WIRES, Platinum, Mass transfer, Electrolytes, Ferri-cyanide-Ferrocyanide  
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ELECTROLYSIS, Cyclic nitro-compounds. See NITRO-COMPOUNDS, Cyclic, Electrolysis  
ELECTROLYSIS, Nitric acid-Oxalic acid, Glycine production. See GLYCINE, Production, Nitric acid-Oxalic acid, Electrolysis  
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**ELECTROLYSIS, Zinc production.** See **ZINC, Production, Electrolysis**

**ELECTROLYTES, Electroforming, Metals.** See **METALS, Electroforming, Electrolytes**

**ELECTROLYTES, Solutions, Aqueous, Diffusion, Carbon dioxide.** See **CARBON DIOXIDE, Diffusion, Electrolytes, Aqueous solutions**

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**ELECTROLYTIC POLISHING.** See **POLISHING, Electrolytic**  
**ELECTROLYTIC POLISHING, Copper.** See **COPPER, Polishing, Electrolytic**

**ELECTROLYTIC POLISHING, Stainless steel.** See **STEEL, Stainless, Polishing, Electrolytic**

**ELECTROLYTIC POLISHING, Transmission electron microscopy, Metal foil.** See **FOIL, Metal (Microscopy, Electron, Transmission) Electropolishing**

**ELECTROLYTIC REFINING, Gold.** See **GOLD, Refining, Electrolytic**

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**ELECTROMAGNETIC CONTROL SYSTEMS, Papermaking machines.** See **PAPERMAKING, Machines, Control systems, Electromagnetic**

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**ELECTROMAGNETIC MICROBALANCES, Radiometer forces determination, Vacuum.** See **VACUUM, Radiometer forces, Determination, Microbalances, Electromagnetic**

**ELECTROMAGNETIC MICROBALANCES, Vacuum.** See **VACUUM, Microbalances, Electromagnetic**

**ELECTROMAGNETIC PUMPS.** See **PUMPS, Electromagnetic**

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**ELECTROMAGNETIC PUMPS, Liquid metals.** See **METALS, Liquid, Pumps, Electromagnetic**

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WAVEFORMS

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ELECTROWINNING

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**ELECTROMETER TUBES**. See ELECTRON TUBES, Electrometer

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**ELECTRON**. See also ELECTRONS

**ELECTRON ACCELERATORS**. See ACCELERATORS, Electron

**ELECTRON BEAM GENERATORS**. See ELECTRON GUNS

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**ELECTRON MICROSCOPES, Fatigue studies, Metal films**.

See FILMS, Metal, Fatigue, Studies, Electron microscopes

**ELECTRON MICROSCOPES, Lubricating grease analysis**.

See LUBRICATING GREASES, Analysis, Electron microscopes

**ELECTRON MICROSCOPES, Single crystal substrates, Vacuum deposited metal films**. See FILMS, Metal, Vacuum deposited (Substrates, Single crystal) Electron microscopes

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**ELECTRON MICROSCOPY, Ageing studies, Copper-Indium**.

See COPPER-INDIUM, Ageing, Studies, Microscopy, Electron

**ELECTRON MICROSCOPY, Barium coated nickel alloy thermionic cathode studies**. See CATHODES, Thermionic, Nickel alloy, Barium coated, Studies, Electron microscopy

**ELECTRON MICROSCOPY, Coal**. See COAL, Electron microscopy



- ELECTRON MICROSCOPY**, Dislocation studies, Graphite, Films. See FILMS, Graphite, Dislocations, Studies, Electron microscopy
- ELECTRON MICROSCOPY**, Dislocation studies, Single crystals, Copper. See COPPER, Crystals, Single, Dislocation, Studies, Microscopy, Electron
- ELECTRON MICROSCOPY**, Hot ductility studies, Austenitic stainless steel. See STEEL, Stainless, Austenitic, Ductility, Hot, Studies, Electron microscopy
- ELECTRON MICROSCOPY**, Impurities, Effect on mechanical properties, Crystals, Magnesium oxide. See MAGNESIUM OXIDE, Crystals, Mechanical properties, Effect of impurities, Electron microscopy
- ELECTRON MICROSCOPY**, Irradiation studies, Metal foil. See FOIL, Irradiation, Studies, Electron microscopy
- ELECTRON MICROSCOPY**, Liquid immiscibility, Barium oxide-Silica, Glass. See GLASS, Barium oxide-Silica, Liquid, Immiscibility, Studies, Microscopy, Electron
- ELECTRON MICROSCOPY**, Metal foil. See FOIL, Metal, Microscopy, Electron
- ELECTRON MICROSCOPY**, Metallography. See METALLOGRAPHY, Microscopy, Electron
- ELECTRON MICROSCOPY**, Paint. See PAINT, Microscopy, Electron
- ELECTRON MICROSCOPY**, Polymers. See POLYMERS, Microscopy, Electron
- ELECTRON MICROSCOPY**, Quench ageing, Iron alloys. See IRON, Alloys, Ageing, Quench, Microscopy, Electron
- ELECTRON MICROSCOPY**, Silicon carbide, Films. See FILMS, Silicon carbide, Microscopy, Electron transmission
- ELECTRON MICROSCOPY**, Single molecules, Polymers. See POLYMERS, Molecules, Single, Microscopy, Electron
- ELECTRON MICROSCOPY**, Strain ageing, Iron alloys. See IRON, Alloys, Ageing, Strain, Microscopy, Electron
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- ELECTRON PROBE MICROANALYSIS**, Non-metallic inclusions, Steel. See STEEL, Inclusions, Non-metallic, Electron probe microanalysis
- ELECTRON PROBE MICROANALYSIS**, Oxide films, Anodising, Aluminium alloys. See ALUMINIUM, Alloys, Anodising, Oxide films, Microanalysis, Electron probe
- ELECTRON PROBE MICROANALYSIS**, Slag, Inclusions, Steel. See STEEL, Inclusions, Slag, Electron probe microanalysis
- ELECTRON PROBE MICROANALYSIS**, Thickness measurement, Coatings. See COATINGS, Thickness, Measurement, Electron probe microanalysis
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- ELECTRON SPIN RESONANCE**, Studies, Gamma irradiation, Polyamides. See POLYAMIDES, Irradiation, Gamma, Studies, Electron spin resonance
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MICROWAVES

**ELECTRONICS**

Related Headings—cont.

PHOTOELECTRIC

PULSES

SUPERCONDUCTIVITY

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Related Headings:

AMPLIFIERS, Parametric

CAPACITORS, Ceramic, Thin film

CONTACTS, Ohmic

DELAY LINES

ELECTRON TUBES

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**ELECTRONS, Excitation, X-ray analysis. See X-RAYS, Analysis, Electron excitation**

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**ELECTRONS, Irradiation, Gas removal, Cellulose, Cotton. See COTTON, Cellulose, Gas removal, Irradiation, Electrons**

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**ELECTROPLATING**

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ELECTRODEPOSITION**ELECTROPLATING—SUBHEADINGS—Synopsis***This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Special localities

Germany  
Netherlands  
Russia  
Lithuania

Standards

Technical activities &amp; problems

Work study  
Effluents

Plant

Jigs  
Solutions  
Boilers  
Control systems  
Transfer machines

Deposit of particular metals

Chromium  
Copper  
Nickel  
Nickel-Chromium  
Precious metals  
Gold  
Silver  
Palladium  
Platinum metals**ELECTROPLATING, Aluminium.** See ALUMINIUM, Electroplating**ELECTROPLATING, Boilers, Oil-fired, Burners**

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**ELECTROSLAG WELDING, Steel, Plates, Ships.** See SHIPS, Plates, Steel, Welding, Electroslag

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**ELECTROSTATIC CHARGING, Fuelling, Aircraft.** See AIRCRAFT, Fuelling, Electrostatic charging

**ELECTROSTATIC D.C. GENERATORS.** See GENERATORS, Electrical, D.C., Electrostatic

**ELECTROSTATIC DEVICES, Internal friction measurement.** See FRICTION, Internal, Measurement, Electrostatic devices

**ELECTROSTATIC DEVICES, Resonant frequency determination, Young's modulus.** See YOUNG'S MODULUS, Determination, Resonant frequency, Electrostatic devices

**ELECTROSTATIC FLOCKING, Nylon, Carpets.** See CARPETS, Nylon, Flocking, Electrostatic

**ELECTROSTATIC GENERATORS, Propulsion, Astronautic vehicles.** See ASTRONAUTICS, Vehicles, Propulsion, Electric, Generators, Electrostatic

**ELECTROSTATIC (GRAVEL) SEPARATION, Diamonds.** See DIAMONDS, Separation (Gravel) Electrostatic

**ELECTROSTATIC MICROPHONES.** See MICROPHONES, Condenser

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**ENCAPSULATION, Electronic components.** See **ELECTRONICS**, Components, Encapsulation

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**ENGINEERING**

## Related Headings:

ASTRONAUTICS  
CONTROL SYSTEMS  
DRAINAGE  
MINING  
RAILWAYS  
ROADS  
SHIPBUILDING  
SYSTEMS, Engineering  
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WATER, Engineering

**ENGINEERING—SUBHEADINGS—Synopsis**

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Particular countries  
*Great Britain*

Organisation  
Profession  
*Consultants*  
*Insurance*

*Technical writing*

Education  
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Research  
*Development*

*Mathematics**Design**Drawing**Materials**Plant*

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**ENGINES**

Related Headings:

COMBUSTION CHAMBERS

**ENGINES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Components  
Governors

Types  
Multicylinder  
Internal combustion  
Rotary  
By fuel  
Dual fuel  
Multifuel

Applications  
Vehicles  
Aircraft  
Light aircraft  
Helicopters  
Ships  
Motor boats  
Yachts  
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Motor vehicles  
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FLOORS, Heating, Ergonomics

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ROTARY PURSUIT TESTS

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 FURZE, Extractives  
 GERANIUM OIL  
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 LEMONGRASS OIL  
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EXTRUDED ALUMINIUM ALLOYS, Plates. See PLATES, Aluminium alloy, Extruded

EXTRUDED ALUMINIUM ALLOYS, Rods. See RODS, Aluminium alloys, Extruded

EXTRUDERS, Baling, Synthetic rubber. See RUBBER, Synthetic, Baling, Extruders

EXTRUDERS, Blow moulding, Thermoplastics. See THERMOPLASTICS, Moulding, Blow, Extruders

EXTRUDERS, Drying, Synthetic rubber. See RUBBER, Synthetic, Drying, Extruders

EXTRUDERS, P.V.C., Sheets. See SHEETS, P.V.C., Extruders

EXTRUDERS, Plastics. See PLASTICS, Extruders

EXTRUDERS, Thermoplastics. See THERMOPLASTICS, Extruders

EXTRUDERS, Thermoplastics film. See FILM, Thermoplastics, Extruders

EXTRUSION, Aluminium. See ALUMINIUM, Extrusion

EXTRUSION, Aluminium alloys. See ALUMINIUM, Alloys, Extrusion

EXTRUSION, Brass. See BRASS, Extrusion

EXTRUSION, Clay, Bricks. See BRICKS, Clay, Extrusion

EXTRUSION, Clay, Ceramics. See CERAMICS, Clay, Extrusion

EXTRUSION, Cold, Aluminium alloys. See ALUMINIUM, Alloys, Extrusion, Cold

EXTRUSION, Cold, Metals. See METALS, Extrusion, Cold

EXTRUSION, Cold, Spindles, Rear axles, Lorries. See LORRIES, Rear axles, Spindles, Extrusion, Cold

EXTRUSION, Cold, Steel. See STEEL, Extrusion, Cold

EXTRUSION, Cold, Steel stepped shafts. See SHAFTS, Stepped, Steel, Extrusion, Cold

EXTRUSION, Cold, Titanium, Aircraft components. See AIRCRAFT, Components, Titanium, Extrusion, Cold

EXTRUSION, Cold, Tungsten carbide. See TUNGSTEN CARBIDE, Extrusion, Cold

EXTRUSION, Copper. See COPPER, Extrusion

EXTRUSION, Copper alloys. See COPPER, Alloys, Extrusion

EXTRUSION, Cored wire electrodes, Sparking plugs. See SPARKING PLUGS, Electrodes, Cored wire, Extrusion

**EXTRUSION, Dies, Curved, Slip-line fields**

Plane strain extrusion through partially rough curved dies. M. J. Hillier & W. Johnson. *International J. of Mechanical Sciences*, 5 (Jul 63) p.191-201. il. refs.

EXTRUSION, Effect on crystallisation, Polyethylene terephthalate, Film. See FILM, Polyethylene terephthalate, Crystallisation, Effect of extrusion variables

EXTRUSION, Electric cables. See CABLES, Electric, Extrusion

EXTRUSION, Hot, Clay, Bricks. See BRICKS, Clay, Extrusion, Hot

EXTRUSION, Hot, Steel. See STEEL, Extrusion, Hot

EXTRUSION, Impact, Metals. See METALS, Extrusion, Impact

EXTRUSION, Metals. See METALS, Extrusion

EXTRUSION, Nylon 11. See NYLON 11, Extrusion

EXTRUSION, P.V.C. See P.V.C., Extrusion

EXTRUSION, Plastics. See PLASTICS, Extrusion

#### EXTRUSION, Slip-line fields

Slip line fields for extrusion through lipped or curved dies. M. J. Hillier. *International J. of Mechanical Sciences*, 4 (Nov/Dec 62) p.529-37. il. refs.

EXTRUSION, Thermoplastics. See THERMOPLASTICS, Extrusion

EXTRUSION, Tubes. See TUBES, Extrusion

EYE HEIGHT, Drivers, Motor car design. See MOTOR CARS, Design, Ergonomics, Driver eye height

#### EYES

Related Headings:  
VISION

F-REGION, Ionosphere, Reflection, Radio waves. See RADIO, Waves, Reflection, Ionosphere, F-region

FABRICS

Related Headings:  
LACE  
WEAVING

#### FABRICS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Problems  
Faults

Properties  
Width  
Stress-strain relationships  
Friction  
Flame resistance

Technical activities  
Design  
Manufactures  
Equipment  
Waste thread shearers  
Drying  
Finishing  
Finishes  
Decatising  
Dyeing  
Printing  
Laminating  
Packaging

Types of fabrics  
Check  
Elastic  
Smooth drying  
Water repellent  
Non-woven  
Knitted  
Warp knit  
Resin finished  
Polymerisation  
Dyed  
Heated

## FABRICS—SUBHEADINGS—Synopsis—cont.

Coated

Varnished

Foamback

Tufted

Pile

Fleecy

Rib

Cord

Net

Narrow

## Types by material

Blended

Cellulosic

Cotton

Jute

Woollen

Worsted

Cashmere

Man-made fibres

Cellulosic

Rayon

Cellulose triacetate

Tricel

Polyamides

Nylon

Polyesters

Terylene

Acrylic fibres

Acrilan

Courtelle

P.V.C.

Glass fibre

Metallic

## FABRICS, Acrilan

Acrilan in the woven fabric field. Textile Recorder, 80 (Apr 63) supplement p.3-5. il.

Dominant A: Acrilan chosen for both fleece and high pile. Man-Made Textiles, 40 (Apr 63) p.77-82. il.

## FABRICS, Acrilan, Tufted

Fine gauge tufters prefer Acrilan. Man-Made Textiles, 40 (Jan 63) p.63. il.

## FABRICS, Acrilan, Tufted, Manufactures

Technique of tufting Acrilan. L. O'Toole. Man-Made Textiles, 40 (Jan 63) p.64-7. il.

## FABRICS, Acrilan—Worsted, Finishing

Finishing Acrilan/worsted fabrics by the Chemmax finishing routine. Man-Made Textiles, 40 (Nov 63) p.57-62. il. refs.

Finishing conditions of Acrilan worsted fabrics. A. D. Rosenberg. J. of Textile Inst., Proc., 54 (Jul 63) p.146-55. refs.

## FABRICS, Acrylic fibres

European success for German acrylic. H. Wild. Skinner's Record, 37 (Sep 63) p.766-7. il.

## FABRICS, Blended

Relations between cloth, yarn and fibre properties with particular reference to blended cloths. G. E. Chadwick, J. Pollitt & H. M. Taylor. J. of Textile Inst., Proc., 54 (Jul 63) p126-34. il. refs.

## FABRICS, Cashmere—Wool, Weaving

Cashmere and wool mixtures. "Portex". Wool Record, 103 (8 Mar 63) p.37+. il.

## FABRICS, Cellulose triacetate, Knitted

Textured triacetate knit fabrics. Dyer, Textile Printer, Bleacher & Finisher, 229 (22 Feb 63) p.263

## FABRICS, Cellulosic, Bleaching, Sodium chlorite

Bleaching with sodium chlorite: recent progress on cellulose materials. A. J. Hall. Textile Weekly, 63 (25 Oct 63) p.826+

## FABRICS, Cellulosic, Continuous preparation

Continuous preparation of cellulosic-and synthetic-fibre fabrics. R. S. Higginbotham. J. of Soc. of Dyers & Colourists, 79 (Sep 63) p.412-17. il. refs.

## FABRICS, Cellulosic, Crease resistant

Improvement in crease-resistant fabrics. Textile Weekly, 63 (2 Aug 63) p.193-4

## FABRICS, Cellulosic, Dyeing

Dyeing of cellulosic materials. D. M. Nunn. Textile Recorder, 81 (Jun 63) p.73-6

## FABRICS, Cellulosic, Dyeing, Procion dyes

Modern practice in continuous dyeing of cellulosic fibres with Procion dy. s. J. A. Fowler. Textile Recorder, 81 (Dec 63) p.55+. refs.

## FABRICS, Cellulosic, Finishing, Epoxy resins

Epoxides and their use in the textile industry, pt.2. D. M. Hall & B. J. Reuben. Textile Recorder, 80 (Jan 63) p.53-5. il. refs.

## FABRICS, Check, Fancy, Weaving

Fancy check design in single cloths. A. J. Bennett. Textile Manufacturer, 89 (Feb 63) p.58-9. il.

## FABRICS, Clothing. See CLOTHING, Fabrics

## FABRICS, Coated (P.V.C.) Thickness, Measurement, Beta gauges

Web thickness control by beta-ray. J. T. Laing. International Plastics Engng., 3 (Sep 63) p.351-4. il.

## FABRICS, Coated, Polythene, Laminating

Laminating polythene film to coarse fabrics. Rubber & Plastics Weekly, 144 (5 Jan 63) p.10. il.

## FABRICS, Containers, Food. See FOOD, Containers, Fabric

## FABRICS, Cords, Tyres, Motor vehicles. See MOTOR VEHICLES, Tyres, Cords, Fabrics

## FABRICS, Cord, Weaving

Cloth construction: ribs and cords. A. J. Bennett. Textile Manufacturer, 89 (May 63) p.186-7. il.

## FABRICS, Costumes. See COSTUMES, Fabrics

## FABRICS, Cotton

Cotton fights back: new processing techniques provide answer to inroads of the synthetics. W. M. Segall. Hosiery Times, 36 (Oct 63) p.38+

## FABRICS, Cotton, Bleaching

Textile producers introduce continuous bleaching and finishing range [Hyde plant of Ashton Bros. & Co. Ltd.] Textile Recorder, 81, (Nov 63) p.92-3. il.

## FABRICS, Cotton, Crease resistance, Recovery-strength relationship

Recovery/strength relation of treated cottons. J. T. Marsh. Textile Manufacturer, 89 (Jun 63) p.248-51. il.

## FABRICS, Cotton, Dyeing

Progressive dyeing and finishing concern. Textile Recorder, 80 (Jan 63) p.56-8. il.

## FABRICS, Cotton, Dyes, Azo compounds, Effect of finishes

Effect of finishing agents on azoic dyeings. R. W. Moncrieff. Dyer, Textile Printer, Bleacher & Finisher, 130 (15 Nov 63) p.729-30. ref.

## FABRICS, Cotton, Elastic

Stretch cottons. W. A. Reeves. Textile Recorder, 81 (May 63) p.56+. il. refs.

## FABRICS, Cotton, Finishing

Textile producers introduce continuous bleaching and finishing range [Hyde plant of Ashton Bros. & Co. Ltd.] Textile Recorder, 81 (Nov 63) p.92-3. il.



**FABRICS, Cotton, Knitted**

Cotton can produce elastic knitted fabrics. E. S. Olson. Dyer, Textile Printer, Bleacher & Finisher, 130 (6 Sep 63) p.304-8.

**FABRICS, Cotton, Manufactures**

Efficient production flow from yarn to cloth: Westport Textiles Ltd. new mill is opened. Textile Weekly, 63 (4 Oct 63) p.673-4. il.

**FABRICS, Cotton, Printing, Silk screen, Design**

Screen-printed cotton Cruachan. Design (Jun 63) p.44-5. il. Screen printed cotton Harrington. Design (Jun 63) p.47. il.

**FABRICS, Cotton, Raising**

Raising (of cotton fabrics): the effect of cloth structure & preparation. E. Moss. J. of Textile Inst. Proc., 54 (Jan/Feb 63) p.1-23. refs.

**FABRICS, Cotton, Smooth drying, Crease resistance**

"Self-ironing" fabrics [Belofast] Textile Weekly, 63 (15 Mar 63) p.481-2. il.

**FABRICS, Cotton, Smooth drying, Finishes, Stability, Washing**

Resistance of smooth-drying cottons to hydrolysis. J. T. Marsh. Textile Recorder, 81 (Jun 63) p.77-8. refs.

**FABRICS, Cotton, Soil, Fatty material, Washing, Detergents**

Mechanism of fatty soil removal. B. A. Scott. J. of Applied Chemistry, 13 (May 63) p.133-44. il. refs.

**FABRICS, Cotton, Wear, Studies, Electron microscopy**

Wear, abrasion, and laundering of cotton fabrics. Part 1: wear of fabrics during actual service and laundering. Part 2: wear of fabrics on laboratory test machines. P. Chippindale. J. of Textile Inst., Trans., 54 (Nov 63) p.433-63. il. refs.

**FABRICS, Cotton, Weaving**

Productivity in cotton weaving. K. P. Norris. Textile Inst. & Industry, 1 (Aug 63) p.13-15

**FABRICS, Courtele**

"Courtele" for Autumn '63. Hosiery Times, 36 (Feb 63) p.47+. il.

Uses of Courtele acrylic fibre with special reference to the construction of knitted, woven and tufted fabrics. A. F. Greenwood & A. E. L. Marsh. J. of Textile Inst., Proc., 54 (Jul 63) p.101-11. ref.

**FABRICS, Courtele, Fleecy**

Fleece fabrics in Courtele. Textile Weekly, 63 (4 Jan 63) p.18

**FABRICS, Courtele, Tufted, Fleecy**

Courtele eyes the tufted fleece. Skinner's Record, 37 (Jun 63) p.470-1. il.

**FABRICS, Courtele-Wool, Dyeing**

Dyeing and finishing "Courtele" in woollen spun fabrics. E. Wells. Textile Manufacturer, 89 (Jul 63) p.295+. il.

**FABRICS, Courtele-Wool, Finishing**

Dyeing and finishing "Courtele" in woollen spun fabrics. E. Wells. Textile Manufacturer, 89 (Jul 63) p.295+. il.

**FABRICS, Courtele-Wool, Knitted**

Three-point success plan for M.I. knitter. Skinner's Record, 37 (Aug 63) p.645-6. il.

**FABRICS, Decatising, Machines**

Textile machinery developments: automatic decatising machine [Decomat] Wool Record, 103 (3 May 63) p.25+. il.

**FABRICS, Design**

Textiles in the context of design today (extract) D. Johnston. Textile Recorder, 81 (Jun 63) p.60-1. il.

**FABRICS, Dresses. See DRESSES, Fabrics****FABRICS, Dressing gowns. See DRESSING-GOWNS, Fabrics****FABRICS, Drying, Cylinders**

Modern compact cylinder drying unit [Rigby & Mellor Ltd.] Textile Manufacturer, 89 (Aug 63) p.327-8. il.

**FABRICS, Drying, Cylinders, Explosions**

Explosion and collapse of steam drying cylinders. E. Ingham. Dyer, Textile Printer, Bleacher & Finisher, 129 (3 May 63) p.627+

**FABRICS, Drying, Stenters**

Features in the Aeronat single layer stenter. Textile Manufacturer, 89 (Feb 63) p.81+. il.

Krantz Aeronat single layer stenter. Dyer, Textile Printer, Bleacher & Finisher, 129 (11 Jan 62) p.61+. il.

Krantz Aeronat single layer stenter. Hosiery Times, 36 (Mar 63) p.59+. il.

New single layer stenter Krantz Aeronat. Hosiery Trade J., 70 (Jun 63) p.114-15. il.

**FABRICS, Dyed, Colour fastness, Testing**

Colour fastness and testing of fabric finishes. T. W. J. Apperley. Textile Recorder, 81 (Sep 63) p.101-3. il. refs.

**FABRICS, Dyeing, Beam, Machines**

Use of high pressure beam method speeds up dyeing. Wool Record, 103 (1 Feb 63) p.25-6. il.

**FABRICS, Dyeing, Control systems, Punched cards**

Automatic control in the dyehouse. Textile Weekly, 63 (15 Feb 63) p.284+. il.

**FABRICS, Dyeing, Expander rollers**

Expanders in wrinkle removal and prevention. Dyer, Textile Printer, Bleacher & Finisher, 130 (13 Dec 63) p.931+. il.

**FABRICS, Dyeing, Expander rollers, Sleeves, Rubber**

Installation and maintenance of rubber sleeve cloth expanders. Textile Recorder, 81 (Aug 63) p.78. il.

**FABRICS, Dyeing, Vat, Liquid metal baths**

Continuous dyeing using molten metal ["Standfast"] Tin & its Uses, no.57 (1962) p.14-16. il.

**FABRICS, Elastic**

Circular stretch fabrics. G. A. Chapman. Hosiery Times, 36 (Jan 63) p.24-5. il.

**FABRICS, Elastic, Weaving, Warping**

Stretchy warps. Man-Made Textiles, 40 (Feb 63) p.30-2. il.

**FABRICS, Faults**

Yarn and cloth faults. E. J. Poole. Textile Manufacturer, 89 (Jan 63) p.31-2

**FABRICS, Finishes, Flameproof**

Spraying on safety [Dee Val Flameproofing Compound] B. W. Kay. Skinner's Record, 37 (Jan 63) p.39+. il.

**FABRICS, Finishing**

Chemical finishing. W. A. Straw. Textile Recorder, 81 (Jul 63) p.60+. il. refs.

Chemical finishing: yesterday, today and to-morrow. J. T. Marsh. Textile Manufacturer, 89 (Aug 63) p.334-7

European view of textile finishing: summary of "Textile finishing international." J. G. Evans. Dyer, Textile Printer, Bleacher & Finisher, 130 (20 Sep 63) p.439+

Finishing plant at S.A.T.I. project. Textile Weekly, 63 (1) (11 Jan 63) p.57-9. il.

Northern Ireland's completely self-contained textile printers [Ulster Print Works, Newtownards] N. D. Evans. Dyer, Textile Printer, Bleacher & Finisher, 130 (4 Oct 63) p.517+. il.

Some new facts in dyeing and finishing processes. B. C. M. Dorset. Textile Manufacturer, 89 (Apr 63) p.161+. il.

**FABRICS, Finishing, Expander rollers**

Expanders in wrinkle removal and prevention. Dyer, Textile Printer, Bleacher & Finisher, 130 (13 Dec 63) p.931+. il.

**FABRICS, Finishing, Expander rollers, Sleeves, Rubber**

Installation and maintenance of rubber sleeve cloth expanders. Textile Recorder, 81 (Aug 63) p.78. il.

**FABRICS, Finishing, Fluorine compounds**

"Zepe" fabric fluoridizer. Textile Manufacturer, 89 (Dec 63) p.528-9. il.

**FABRICS, Finishing, Formaldehyde solutions**

Reaction between cellulose and aqueous formaldehyde. W. J. Roff. J. of Textile Inst., Trans., 54 (Jul 63) p.281-96. il. refs.

**FABRICS, Finishing, Instruments**

Textile finishing control: summary of "Wet finishing instruments and their application". W. H. Ridley. *Dyer, Textile Printer, Bleacher & Finisher*, 130 (4 Oct 63) p.497-9

**FABRICS, Finishing, Positioning control, Rollers, Curved**

Getting the most from curved rollers. *Textile Manufacturer*, 89 (Feb 63) p.63-6. il.

**FABRICS, Finishing, Resins**

Padding and drying in resin finishing. *Textile Recorder*, 80 (Feb 63) p.59-61. il. refs.

Recently developed resins: C.R. performance and chlorine retention properties. J. McCartney. *Dyer, Textile Printer, Bleacher & Finisher*, 130 (1 Nov 63) p.653-5. refs.

Synthetic resin finishing agent for textiles. *Textile Manufacturer*, 89 (Apr 63) p.171

**FABRICS, Finishing, Resins, Formaldehyde reactions**

Side reactions of formaldehyde in resin finishing. J. McCartney. *Dyer, Textile Printer, Bleacher & Finisher*, 129 (11 Jan 63) p.23-7. refs.

**FABRICS, Finishing, Resins, Machines**

Miniature machine for resin-finishing of textile fabrics. *Dyer, Textile Printer, Bleacher & Finisher*, 129 (3 May 63) p.631+ il.

**FABRICS, Finishing, Resins, Studies, Radiosotopes,****Tritium, Autoradiography**

Autoradiography of tritium containing resin-finished textiles. G. S. Park. *Textile Inst. & Industry*, 1 (Aug 63) p.8-9. il. refs.

**FABRICS, Finishing, Testing**

Colour fastness and testing of fabric finishes. T. W. J. Apperley. *Textile Recorder*, 81 (Sep 63) p.101-3. il. refs.

Colour fastness and testing of fabric finishes, pt.2.

T. W. J. Apperley. *Textile Recorder*, 81 (Oct 63) p.103-4. il. refs.

**FABRICS, Finishing, Weft straighteners**

Correcting skew and bow in woven cloths. *Textile Manufacturer*, 89 (May 63) p.207-8. il.

**FABRICS, Flame resistance**

Fire hazards of fabrics. D. L. Simms. *Textile Inst. & Industry*, 1 (Sep 63) p.11-13

**FABRICS, Foamback**

Foam technologists aim to raise product quality. *Skinner's Record*, 37 (Nov 63) p.985-6. il.

Foambacked textiles. F. Kassack & G. Berndt. *Man-Made Textiles*, 40 (Jul 63) p.57+. il. refs.

Foambacks success measured in millions of yards. *Skinner's Record*, 37 (Aug 63) p.683-4

Foambacks: the schizophrenic giants. *Skinner's Record*, 37 (Aug 63) p.648-9. il.

Laminates—new finishes and adhesives. *Man-Made Textiles*, 40 (Jul 63) p.43. il.

**FABRICS, Foamback, Finishes, Water repellent, Silicones**

Silicone finishing foambacks. *Skinner's Record*, 37 (Mar 63) p.246+. il.

Silicone proofing of foambacks: procedure with I.C.I. fluids. *Textile Weekly* 63(2) (5 Jul 63) p.27-8

Silicone treatment for foamback fabrics. P. A. Trafford & R. J. Newton. *Man-Made Textiles*, 40 (Oct 63) p.77+. il.

Silicones can aid foambacks. A. J. Cuthbertson. *Skinner's Record*, 37 (Aug 63) p.680

**FABRICS, Foamback, Laminating, Adhesive transfer spreading**

New process for combining urethane foam with textiles.

W. F. Smith. *J. of Soc. of Dyers & Colourists*, 79 (Apr 63) p.133-8. il. refs.

**FABRICS, Foamback, Laminating, Adhesives**

Adhesive laminating without fire risk. P. D. Yates. *Skinner's Record*, 37 (Feb 63) p.114-5. il.

**FABRICS, Foamback, Laminating, Plant**

Advances in new foam/fabric combining machinery. *Textile Manufacturer*, 89 (Feb 63) p.61-2. il.

Another U.S. adhesive method. *Skinner's Record*, 37 (Jan 63) p.21-22. il.

Complete foambacking equipment range. *Hosiery Trade J.*, 70 (Feb 63) p.105-8. il.

Comprehensive range of equipment for fabric/foam lamination. *Textile Recorder*, 80 (Jan 63) p.75+. il.

Foam to fabric. G. E. Macpherson. *Hosiery Times*, 36 (Jan 63) p.52+. il.

Machinery for the fabric/foam lamination trade. *Textile Recorder*, 81 (Jul 63) p.69+. il.

**FABRICS, Foamback, Manufactures**

Colchester foamer favours flame. *Man-Made Textiles*, 40 (Jul 63) p.50-1. il.

**FABRICS, Foamback, Thermal insulation, Testing, Machines**

U.S. device measures foam insulation. *Skinner's Record*, 37 (Aug 63) p.650. il.

**FABRICS, Foamback, U.S.A.**

Foambacks in the textile industry. V. L. Erlich. *Man-Made Textiles*, 40 (Feb 63) p.55+. il.

**FABRICS, Foamback, Waterproofing**

Med-proof come wind or weather. A. J. Cook. *Skinner's Record*, 37 (Jan 63) p.30-1. il.

**FABRICS, Friction**

Study of fabric-on-fabric dynamic friction. D. Wilson. *J. of Textile Inst., Trans.*, 54 (Apr 63) p.143-55. il. refs.

**FABRICS, Furnishings. See FURNISHINGS, Fabrics****FABRICS, Glass fibre**

Glass fibres and fabrics. *Dyer, Textile Printer, Bleacher & Finisher*, 130 (6 Sep 63) p.335-6

Production processes and end-uses of continuous filament glass fibre. *Textile Manufacturer*, 89 (Dec 63) p.530-3. il.

**FABRICS, Glass fibre, Finishing**

Automatic glass finishing plant. *Reinforced Plastics*, 7 (Mar 63) p.214-15. il.

Continuous coronising and finishing range for British glass textiles. *Dyer, Textile Printer, Bleacher & Finisher*, 129 (22 Mar 63) p.409-12. il.

Continuous finishing of glass fabrics. *Textile Weekly*, 63 (22 Mar 63) p.527-8. il.

Continuous fully automatic glass finishing plant. *Textile Manufacturer*, 89 (May 63) p.197-8. il.

Finishing glass fibre fabrics. *Man-Made Textiles*, 40 (Apr 63) p.56+. il.

Pioneers in glass textiles [Hess Goldsmith Co.]: complex pre-finishing and post-treatment are the secrets of satisfactory products. *Man-Made Textiles*, 40 (Nov 63) p.66+. il.

**FABRICS, Heated (Radiation) Pyrometry**

Temperature measurement of textile fabrics under intense thermal irradiation. L. E. MacHattie. *Brit. J. of Applied Physics*, 14 (May 63) p.267-70. il. refs.

**FABRICS, Household. See HOUSEHOLD TEXTILES****FABRICS, Jute, Laminating, Polythene film**

Bonding thermoplastic films to coarse fabrics. *Textile Weekly*, 63 (4 Jan 63) p.25-6. il.

**FABRICS, Knitted**

Knitters invade weavers' domain. *J. B. Lancashire. Hosiery Times*, 36 (Oct 63) p.25+. il.

Structure and stability of knitted fabrics (summary) T. S. Nutting *Dyer, Textile Printer, Bleacher & Finisher*, 130 (13 Dec 63) p.913+. il.



**FABRICS, Knitted, Compressive shrinking**

- Compressive shrinkage and finishing of knitted fabrics. [Bestan machine] Hosiery Times, 36 (Sep 63) p.73+. il.
- Compressive shrinkage of tubular and certain warp knitted fabrics [Bestan machine] Textile Manufacturer, 89 (Sep 63) p.369-70. il.
- Compressive shrinking & finishing [Bestan] Textile Weekly, 63 (2 Aug 63) p.196+. il.
- Compressive shrinking of knitted fabrics and woven wool cloths. A. Melville. Textile Recorder, 81 (Sep 63) p.98+. il.
- New compressive shrinking and finishing machine. [Bestan] Hosiery Trade J., 70 (Oct 63) p.128-9. il.

**FABRICS, Knitted, Dyeing**

- Dyeing knitted piece goods (summary) R. N. Barker, D. Haigh, H. Menon & J. Z. Michajlowicz. Dyer, Textile Printer, Bleacher & Finisher, 130 (29 Nov 63) p.815

**FABRICS, Knitted, Finishing**

- Chemical finishing of knitted fabrics (summary) G. W. Madras. Dyer, Textile Printer, Bleacher & Finisher, 130 (29 Nov 63) p.814

**FABRICS, Knitted, Interlocking, Machines**

- Versatile 32 feeder garment length interlock machine. Hosiery Trade J., 70 (Aug 63) p.110-12. il.

**FABRICS, Knitted, Printing**

- Printed knitted fabrics (summary) A. C. Pitman. Hosiery Trade J., 70 (Dec 63) p.143+

**FABRICS, Knitwear. See KNITWEAR, Fabrics****FABRICS, Laminating**

- Fabric-to-fabric is on the move. Skinner's Record, 37 (Dec 63) p.1069+. il.

**FABRICS, Linings, Motor car parts. See MOTOR CARS, Parts, Linings, Fabrics****FABRICS, Man-made fibres**

- Man-made fibres in the Lancashire textile trade. H. W. Best-Gordon. Textile Recorder, 80 (Apr 63) p.67-9. il.

**FABRICS, Man-made fibres, Containers, Commercial vehicles.**

- See VEHICLES, Commercial, Containers, Fabrics, Man-made fibres

**FABRICS, Man-made fibres, Continuous preparation**

- Continuous preparation of cellulose and synthetic-fibre fabrics. R. S. Higginbotham. J. of Soc. of Dyers & Colourists, 79 (Sep 63) p.412-17. il. refs.

**FABRICS, Man-made fibres, Dyeing**

- Dyeing and finishing polyamide and polyester fabrics. B.C.M. Dorset. Textile Manufacturer, 89 (Jul 63) p.290+. il.
- Dyeing and printing synthetic fabrics. Hosiery Trade J., 70 (Aug 63) p.101
- Recent developments in dyestuffs and dyeing techniques. B. C. M. Dorset. Textile Manufacturer, 89 (Nov 63) p.479-84. il.

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ANIMAL FEEDINGSTUFFS, Manufactures, Factories  
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 BOARD, Paper, Manufactures, Factories  
 BOOKS, Printing, Works, Architecture  
 BREWERIES, Architecture  
 BRICKS, Manufactures, Factories  
 CASTING, Investment, Foundries  
 CHINA, Potteries  
 CLOTHING, Manufactures, Factories, Architecture  
 COSMETICS, Manufactures, Factories  
 FIBRE BOARD, Manufactures, Factories  
 FURNITURE, Manufactures, Factories  
 GIN, Distilleries, Architecture  
 HOUSEHOLD APPLIANCES, Manufactures, Factories  
 LAMPS, Fluorescent, Manufactures, Factories  
 LAMPS, Fluorescent, Packaging, Factories  
 MALTHOUSES  
 MOTOR CARS, Bodies, Factories, Architecture  
 MOTOR CARS, Manufactures, Factories  
 MOTOR VEHICLES, Factories, Architecture  
 MOTOR VEHICLES, Parts, Factories  
 PACKAGING, Factories, Architecture  
 PAINT, Manufactures, Factories  
 PAPER, Mills, Architecture  
 PISTON RINGS, Foundries, Buildings  
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 PLASTICS, Manufactures, Factories  
 POTATOES, Crisps, Processing, Factories, Architecture  
 STEEL, Mills  
 SUITINGS, Fabrics, Manufactures, Factories  
 TEXTILES, Factories  
 TRACTORS, Manufactures, Factories  
 WHISKY, Factories  
 WIRES, Manufactures, Factories

**FACTORIES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Problems  
*Fires*

Sites

*Interior design*

Parts

*Roofs*  
*Rooflights*  
*Insulation*

Services

*Engineering services*  
*Heating*  
*Air conditioning*

**FACTORIES—SUBHEADINGS—Synopsis—cont.**

*Ventilation*  
*Lighting*  
*Electrical installations*  
*Power substations*  
*Circuit breakers*  
*Water supplies*  
*Burglary prevention*

Types of factories  
*Flatted*  
*Underground*

Ancillaries  
*Gatehouses*  
*Restaurants*  
*Social buildings'*

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- FATS, Extraction, Effect on oxidation, Thiol groups, Dough, Flour. See FLOUR, Dough, Thiol groups, Oxidation, Effect of fat extraction
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BASIC SLAG

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FIBRE GLASS, Formwork, Concrete construction, Buildings.

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FIBRE GLASS, Sound insulation, Laboratories. See LABORATORIES, Insulation, Sound, Glass fibre

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- FIBRE GLASS REINFORCED PLASTICS, Bodies, Commercial vehicles. See VEHICLES, Commercial, Bodies, Plastics, Reinforced-Glass fibre
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- FIBRES, Cellulose. See CELLULOSE, Fibres
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FIRES, Mattresses. See MATTRESSES, Fires

FIRES, Motor boats. See BOATS, Motor, Fires

FIRES, Nuclear power stations. See NUCLEAR POWER STATIONS, Fires

FIRES, Nuclear reactors. See NUCLEAR REACTORS, Fires

FIRES, Office buildings. See OFFICE BUILDINGS, Fires

FIRES, Oxy-acetylene flame cutting. See FLAME CUTTING, Oxy-acetylene, Fires

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FIRES, Safety, Chemical technology. See CHEMICAL TECHNOLOGY, Safety, Fires

FIRES, Ships. See SHIPS, Fires

FIRES, Storage, Liquefied petroleum gas. See GAS, Liquefied petroleum, Storage, Fires

FIRES, Textile manufactures. See TEXTILES, Manufactures, Fires

FIRES, Town gas storage. See GAS (Town) Storage, Fires

FIRES, Tramcar depots. See TRAMCARS, Depots, Fires

FIRES, Transport, Petroleum products. See PETROLEUM, Products, Transport, Fires

FIRES, Warehouses, Animal feedingstuffs. See ANIMAL FEEDINGSTUFFS, Warehouses, Fires

**FIRES, Welding.** See **WELDING, Fires**

**FIREWORKS.** See **PYROTECHNICS**

**FIRING, Kaolinite-Mica-Quartz.** See **KAOLINITE-MICA-QUARTZ, Firing**

**FIRING, Kilns.** See **KILNS, Firing**

**FIRING, Kilns, Bricks.** See **BRICKS, Kilns, Firing**

**FIRING, Silicon controlled rectifiers.** See **RECTIFIERS, Silicon controlled, Firing**

**FIRING, Temperature, Effect on mechanical properties, Electrical insulating materials, Porcelain.** See **PORCELAIN, Electrical insulating materials, Mechanical properties, Effect of firing temperature**

**FIRMINY-VERT**

See

**TOWN PLANNING, Firminy-Vert**

**FISCHER REAGENTS, Titrations, Moisture determination.** See **MOISTURE, Determination, Titrations, Karl Fischer reagents**

**FISH**

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COD

EELS

HADDOCK

HERRINGS

PILCHARDS

PLAICE

SALMON

SARDINES

SMELT

TROUT

TUNAS

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LAMP FISHING  
OYSTERS, Fishing  
PILCHARDS, Fishing  
SALMON, Fishing  
SHELLFISH  
SQUIDS, Fishing  
TRAWLING  
TUNAS, Fishing

**FISHING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

**Particular localities**

*Spain*  
*Andalusia*  
*India*  
*Madras*  
*Kenya*  
*South Atlantic Ocean*

*Research*  
*Expeditions*

*Industry*  
*International law*

**FISHING—SUBHEADINGS—Synopsis—cont.**

*Territorial limits*

*Equipment*

*Vessels*

*Nets*

*Activities*

*Echo sounding*

*Echo ranging*

*Sector scanning*

*Special techniques*

*Line*

*Electrical*

*Types of fishing*

*Freshwater*

*Ports*

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TRAWLS

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**FISHING, Vessels, Conversion to motor yachts. See YACHTS, Motor, Conversion from fishing vessels****FISHING, Vessels, Costs, Norway**

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Related Headings:

TETRAKIS (HYDROXYMETHYL) PHOSPHONIUM CHLORIDE

**FLAMEPROOF FINISHES, Fabrics. See FABRICS, Finishes, Flameproof****FLAMEPROOF TRANSFORMERS, Coal mining. See COAL, Mining, Transformers, Flameproof****FLAMEPROOFED WOOD. See WOOD, Flameproofed****FLAMEPROOFING, Man-made fibres. See MAN-MADE FIBRES, Flameproofing****FLAMEPROOFING, Wood. See WOOD, Flameproofing**

**FLAMES, Coal dust—Air, Propagation, Tubes, Vertical**

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**FLAMES, Laminar, Stabilisation, Bluff body**

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**FLAMES, Propagation, Combustion, Engines, Petrol. See PETROL, Engines, Combustion, Flame propagation****FLAMES, Propagation, Tubes**

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**FLAMES, Singing, Damping studies, Oscillations, Combustion, Fuels, Solid-fuelled rockets. See ROCKETS, Solid-fuelled, Fuels, Combustion, Oscillations, Damping, Studies, Singing flames****FLAMMABILITY, Gases, Mining, Coal. See COAL, Mining, Gases, Flammability****FLAMMABLE ATMOSPHERES, Non-sparking hand tools. See HAND TOOLS, Non-sparking, Flammable atmospheres****FLANGED ALUMINIUM—STAINLESS STEEL, Joints, Pipes, Liquid oxygen. See OXYGEN, Liquid, Pipes, Joints (Aluminium—Stainless steel) Flanged****FLANGED BEAMS. See BEAMS, Flanged****FLANGED BOLTED JOINTS. See JOINTS, Bolted, Flanged****FLANGES, Universal joints, Transmissions, Motor vehicles.**

See MOTOR VEHICLES, Transmissions, Joints, Universal, Flanges

**FLANGING, Cans. See CANS, Flanging****FLAPS, Wings, Aircraft. See AIRCRAFT, Wings, Flaps****FLASH AGEING, Printing fabrics. See FABRICS, Printing, Flash ageing****FLASH BOILERS. See BOILERS, Flash****FLASH BOILERS, Steam cars. See MOTOR CARS, Steam, Boilers, Flash****FLASH EVAPORATORS, Distillation, Sea water. See SEA, Water, Distillation, Flash evaporators****FLASH PHOTOLYSIS. See PHOTOLYSIS, Flash****FLASH WELDING, Steel. See STEEL, Welding, Flash****FLASHLIGHT PHOTOGRAPHY. See PHOTOGRAPHY, Flashlight, Equipment****FLASHOVER, Air gaps. See AIR GAPS, Flashover****FLASHOVER, Insulators. See INSULATORS, Flashovers****FLASHOVER, Wet, Insulators. See INSULATORS, Flashover, Wet****FLASKS, Spectrophotometry, Cultures, Microbiology. See MICROBIOLOGY, Cultures; Spectrophotometry, Flasks****FLASKS, Warburg. See WARBURG FLASKS****FLAT PLATE CONCRETE STRUCTURES. See STRUCTURES, Concrete, Flat plate****FLAT ROOFS, Housing. See HOUSING, Roofs, Flat****FLATS**

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Living in high flats—problems of tenants and management. G. L. A. Downing & J. P. T. Calway. *R. Soc. of Health J.*, 83 (Sep/Oct 63) p.237-43. il. refs.

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Steel frames and plastic walls for multi-storey flats. *Surveyor*, 122 (11 May 63) p.613. il.



## FLATS

Related Headings:  
FIREMEN, Flats  
MAISONNETTES  
PENTHOUSES

## FLATS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## Particular localities

## Great Britain

## London

Camberwell

Finsbury

Kensington

Paddington

Southwark

Stepney

Woolwich

Barking

Basildon

Southend on Sea

Crawley

Bracknell

Bristol

Birmingham

Gateshead

Scotland

Glasgow

## France

Paris

## Germany

Bremen

Hamburg

Stuttgart

## Spain

Barcelona

Costa Brava

## Sweden

Göteborg

## U.S.A.

Chicago

## Mexico

Mexico City

## Venezuela

Caracas

## Australia

Sydney

## Technical operations

Prefabrication

Jackblock construction

Sectra construction

Skarne construction

Youtz-Slick construction

Moaernisation

## Structural parts

Foundations

Panels

Balconies

## Services

Engineering services

Heating

Refuse collection

Refuse containers

## Types of flats

By material

Concrete

Wood

## FLATS, Balconies, Concrete, Precast, Sawing, Diamond

Diamonds aid housing programme. D. B. Wood. *Industrial Diamond Rev.*, 23 (Feb 63) p.50-2. il.

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Flats in Barcelona. Architect & Building News, 234 (10 Jul 63) p.47-50. il.

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## FLATS, Basildon

Tower block, Basildon. Architect & Building News, 223 (13 Feb 63) p.239-43. il.

## FLATS, Birmingham

Flats, Birmingham. Architect & Building News, 223 (1 May 63) p.655-8. il.

## FLATS, Bracknell

Flats, Bracknell. Architect & Building News, 224 (16 Oct 63) p.597. il.

High flats at Point Royal, Bracknell. Builder, 205 (11 Oct 63) p.729-30. il.

## FLATS, Bremen

Alvar Aalto in Germany, 1: cultural centre in Wolfsburg;  
2: block of flats in Bremen. R. Rosner. Builder, 204 (11 Jan 63) p.55-8. il.

## FLATS, Bristol

Eleven-storey flats at St. George, Bristol. Official Architecture & Planning, 26 (Nov 63) p.1100-1. il.

## FLATS, Bristol, Shirehampton

Flats and old people's dwellings at Shirehampton, Bristol. Official Architecture & Planning, 26 (Oct 63) p.978-82. il.

## FLATS, Camberwell

Camberwell homes with first-floor gardens. Municipal J., 71 (20 Sep 63) p.2769+. il.

## FLATS, Caracas

Mass urban re-housing problems: superblock programme of Banco Obrero, Caracas, Venezuela, 1954-1958. J. C. Turner. Architectural Design, 33 (Aug 63) p.373-4. il.

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## FLATS, Costa Brava

Apartment houses on the Costa Brava. Builder, 205 (19 Jul 63) p.114. il.

## FLATS, Crawley

Deerswood Court housing scheme. Builder, 205 (2 Aug 63) p.225-8. il.

## FLATS, Finsbury

LCC housing at Banner Street, Finsbury. Official Architecture & Planning, 26 (Mar 63) p.232. il.

## FLATS, Foundations, Mine workings, Grouting

Grouting old mine workings for the support of 16-storey block. R. D. Kaye & E. R. Woolley. Contract J., 192 (25 Apr 63) p.939. il.

## FLATS, Gateshead

Gateshead flats built over old mine workings. Municipal J., 71 (17 May 63) p.1431+. il.

## FLATS, Glasgow

Multiple-storey residential buildings in Glasgow. Concrete & Constructional Engng., 58 (Nov 63) p.449-56. il.

## FLATS, Glasgow, Cranhill

Outer housing zone development at Cranhill, Glasgow. Official Architecture and Planning, 26 (Feb 63) p.116-17. il.

## FLATS, Glasgow, Springburn

Split level housing for Glasgow. Official Architecture & Planning, 26 (Sep 63) p.867+. il.

**FLATS, Göteborg**

Gothenburg flats. Architect & Building News, 224 (17 Jul 63) p.105+. il.

**FLATS, Hamburg**

Prefabrication in West Germany. Builder, 204 (1 Feb 63) p.239-40. il.

**FLATS, Heating, Costs**

Multistorey flat heating: costs of five methods compared. V. Lawson. Electrical Times, 143 (20 Jun 63) p.941-4

**FLATS, Heating, Gas, Warm air**

Winning a multi-storey heating battle. Gas Times, 97 (Aug 63) p.23. il.

**FLATS, Jackblock construction**

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'Jackblock' method. Builder, 204 (12 Apr 63) p.753-4. il.

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**FLATS, Mexico City**

Flats in Calle Merida, Mexico City. Architectural Design, 33 (Sep 63) p.435-6. il.

**FLATS, Modernisation**

Tenement conversion works a 'miracle' in Pimlico. Municipal J., 71 (19 Apr 63) p.1131-2. il.

**FLATS, Paddington**

Flats in Bayswater, London. Architect & Building News, 223 (5 Jun 63) p.857-60. il.

How on-site casting can save costs. Municipal J., 71 (13 Sep 63) p.2699. il.

Large contracts add impetus to development plans. Consulting Engr., 24 (Sep 63) p.314-16. il.

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Battery-cast concrete units. Architect & Building News, 224 (3 Jul 63) p.17-20. il.

**FLATS, Paris**

Flats, Boulogne-sur-Seine. Architectural Design, 33 (Apr 63) p.176-7. il.

**FLATS, Prefabrication, Bison wall frame system**

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**FLATS, Refuse containers**

Bigger containers for higher flats? Islington carry out an interesting experiment [Dempster Dumpster] Public Cleansing, 53 (Dec 63) p.589-91. il.

**FLATS, Sectra construction**

Flats at Heywood, Manchester: 'Sectra' system of industrialised building. Builder, 205 (11 Oct 63) p.721-3. il.

'Sectra' precision in situ construction. Builder, 204 (22 Mar 63) p.603-4. il.

**FLATS, Skarne construction**

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Municipal J., 71 (18 Oct 63) p.3177. il.

Skarne building system may be used at Peterlee. Surveyor, 122 (2 Feb 63) p.127-8. il.

**FLATS, Southend-on-Sea**

Eleven-storey flats for the county borough of Southend-on-Sea. Official Architecture & Planning, 26 (Mar 63) p.205-7. il.

**FLATS, Southwark**

London's highest flats. Consulting Engr., 23 (Feb 63) p.184. il.

London's highest flats at Elephant and Castle. Contract J., 191 (19 Jan 63) p.107. il.

**FLATS, Stepney**

LCC rehousing scheme at Pitsea-street, Stepney. Builder, 205 (25 Oct 63) p.829-32. il.

Mixed housing at Pitsea Street. Surveyor, 122 (7 Dec 63) p.1535-7. il.

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**FLATS, Sydney**

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**FLATS, Wood, Prefabrication**

Timber prefabricated housing: West Bromwich experiment. Builder, 205 (16 Aug 63) p.335. il.

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LCC housing at Morris Walk, Woolwich. Official Architecture & Planning, 26 (Mar 63) p.231. il.

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FLAVOURING, Nut food. See NUT FOOD, Flavouring

FLAVOURING, Popped maize. See MAIZE, Popped, Flavouring

FLAVOURING MATERIALS, Food. See FOOD, Flavouring materials

FLAVOURING MATERIALS, Yoghurt. See YOGHURT, Flavouring materials

FLAVOURS, Beef. See BEEF, Flavours

FLAVOURS, Cocoa beans. See COCOA, Beans, Flavour

FLAVOURS, Food. See FOOD, Flavours

FLAVOURS, Soft drinks. See DRINKS, Soft, Flavours

FLAVOURS, Whale meat. See WHALE MEAT, Flavours

FLAWS, Machined surfaces. See SURFACES, Machined, Flaws

**FLAX, Straw, Retting, Aeration**

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FLEECE TUFTED COURTELLE FABRICS. See FABRICS, Courtelle, Tufted, Fleecy

FLEXIBLE JOINTS, Pipes, Gas turbine testing, Aircraft. See AIRCRAFT, Gas turbines, Testing, Pipes, Joints, Flexible

FLEXIBLE SURFACES, Hulls. See HULLS, Flexible surfaces

FLEXIBLE WINGS, Aircraft. See AIRCRAFT, Wings, Flexible

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**FLEXOGRAPHY, Machines**

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**FLIGHT CONTROL SYSTEMS, Light aircraft.** See AIRCRAFT (Light) Flight control systems

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See

CALCITE, Mining, Flintshire

FLIP-FLOPS, Transistor, Drive units, Lamps, Fault indication, Data processing. See DATA PROCESSING, Fault indication, Lamps, Drive units, Flip-flops, Transistor

FLOAT PROCESS, Glass manufactures. See GLASS, Manufactures, Float process

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FLOATING DRY DOCKS. See DOCKS, Dry, Floating

FLOATING DUMPERS. See DUMPERS, Floating

FLOATING HOSES, Tankers, Ships. See TANKERS, Ships, Hoses, Floating

FLOATING PNEUMATIC ELEVATORS, Grain. See GRAIN, Elevators, Pneumatic, Floating

FLOATING POINT ARITHMETIC, Computers. See COMPUTERS, Floating point arithmetic

FLOCCULATION, Colloids, Suspensions. See SUSPENSIONS, Colloids, Flocculation

FLOCCULATION, Effluents, Refining, Petroleum. See PETROLEUM, Refining, Effluents, Flocculation

FLOCCULATION, Mineral dressing. See MINERAL DRESSING, Flocculation

FLOCCULATION, Powders. See POWDERS, Flocculation

FLOCKING, Electrostatic, Nylon, Carpets. See CARPETS, Nylon, Flocking, Electrostatic

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**FLOOD CONTROL**

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LEVEES

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FLOOD TESTERS, Register-translators, Subscriber trunk dialling, Telephony. See TELEPHONY, Subscriber trunk dialling, Register-translators, Flood testers

FLOODING, Alternators, Water turbines. See WATER, Turbines, Alternators, Flooding

FLOODING, Water turbine alternators. See ALTERNATORS, Water turbines, Flooding

FLOODLIGHTING, Crossings, Pedestrians, Traffic engineering. See TRAFFIC ENGINEERING, Pedestrians, Crossings, Floodlighting

FLOODLIGHTING, Sports grounds. See SPORTS GROUNDS, Floodlighting

FLOODS, Rivers. See RIVERS, Floods

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**FLOORS, Asphalt, Heating, Electric, Underfloor**

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**FLOORS, Coverings**

Related Headings:  
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GASES

LIQUIDS

OSMOSIS

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FLUIDS, Distribution

Related Headings:

HOSES

PIPELINES

PIPES

PIPEWORK

PUMPING

PUMPS

VALVES

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AERODYNAMICS

BOUNDARY LAYER

CAVITATION

FLUMES

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FLUIDS, Flow, Gas-liquid systems. See GAS-LIQUID SYSTEMS, Flow

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CURRENT, Meters

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FLUORESCENCE, Polycyclic compounds. See POLYCYCLIC COMPOUNDS, Fluorescence

FLUORESCENCE, Polystyrene solutions. See POLYSTYRENE, Solutions, Fluorescence

FLUORESCENCE, X-ray excited, Co-ordination numbers determination, Aluminium ions. See ALUMINIUM, Ions, Co-ordination numbers, Determination, X-ray fluorescence

FLUORESCENCE, X-ray excited. See X-RAYS, Fluorescence

FLUORESCENCE, X-ray excited, Inspection, Fuses, Ammunition, Military aircraft. See AIRCRAFT, Military, Ammunition, Fuses, Inspection, X-ray fluorescence

FLUORESCENCE, X-ray excited, Spectroscopy, Steel alloys. See STEEL, Alloys, Spectroscopy, X-ray fluorescence

FLUORESCENCE, X-ray excited, Spectroscopy, Strontium determination, Drinking water. See WATER, Drinking, Determination of strontium, Spectroscopy, X-ray fluorescence

FLUORESCENCE MICROSCOPY. See MICROSCOPY (Fluorescence)

**FLUORESCENT DYES.** See **DYES, Fluorescent**  
**FLUORESCENT DYES, Man-made fibres, Fabrics.** See **FABRICS, Man-made fibres, Dyes, Fluorescent**  
**FLUORESCENT LAMPS.** See **LAMPS, Fluorescent**  
**FLUORESCENT LAMPS, Mercury bulb, Lighting, Factories.**  
 See **FACTORIES, Lighting, Lamps, Fluorescent, Mercury bulb**

**FLUORESCENT LAMPS, Public service vehicles.** See **VEHICLES, Public service, Lamps, Fluorescent**  
**FLUORESCENT LIGHTING.** See **LIGHTING, Fluorescent**  
**FLUORESCENT LIGHTING, Cold stores.** See **COLD STORES, Lighting, Fluorescent**

**FLUORESCENT LIGHTING, Effect on milk products.** See **MILK, Products, Effect of fluorescent lighting**

**FLUORESCENT MAGNETIC PARTICLE TESTING, Inspection, Machining, Stub axles, Motor cars.** See **MOTOR CARS, Stub axles, Machining, Inspection, Fluorescent magnetic particle testing**

**FLUORESCENT PAINT.** See **PAINT, Fluorescent**  
**FLUORIDATION, Water supplies.** See **WATER, Supplies, Fluoridation**

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 FLUORINATED ETHYLENE PROPYLENE  
 FREON

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**FLUTTER, Aircraft.** See **AIRCRAFT, Flutter**

**FLUX, Cores, Current transformers.** See **TRANSFORMERS, Current, Cores, Flux**

**FLUX, Electrical, Superconducting magnets.** See **MAGNETS, Superconducting, Electrical flux**

**FLUX, Heat, Nucleate boiling, Organic chemicals mixtures.** See **ORGANIC CHEMICALS, Mixtures, Nucleate boiling, Heat flux**

**FLUX, Magnetic, Gas discharge.** See **GAS DISCHARGE, Magnetic flux**

**FLUX, Neutrons, Nuclear reactors.** See **NUCLEAR REACTORS, Neutrons, Flux**

**FLUXES, Soft soldering.** See **SOLDERING, Soft, Fluxes**

**FLUXLESS SOLDERS, Aluminium castings.** See **ALUMINIUM, Castings, Solders, Fluxless**

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TAKING-OFF

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**FLYWHEELS, Engines, Motor cycles.** See **MOTOR CYCLES, Engines, Flywheels**

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**FOAM, Suppression, Sonic**

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**FOAMBACK CLOTHING.** See **CLOTHING, Foambacks**

**FOAMBACK FABRICS.** See **FABRICS, Foamback**

**FOAMBACK FABRICS, Knitwear.** See **KNITWEAR, Fabrics, Foamback**

**FOAMBACK TUFTED CARPETS.** See **CARPETS, Tufted, Foamback**

**FOAMED METALS.** See **METALS, Porous**

**FOAMED PLASTICS.** See **PLASTICS, Expanded**

**FOAMED POLYMERS.** See **POLYMERS, Expanded**

**FOAMED POLYSTYRENE.** See **POLYSTYRENE, Expanded**

**FOAMED POLYSTYRENE, Film.** See **FILM, Polystyrene, Expanded**

**FOAMED POLYSTYRENE, Insulation, Floors.** See **FLOORS, Insulation, Polystyrene, Expanded**

**FOAMED POLYSTYRENE, Insulation, Walls, Buildings.** See **BUILDINGS, Walls, Insulation, Polystyrene, Expanded**

**FOAMED POLYSTYRENE, Sheets.** See **SHEETS, Polystyrene, Expanded**

**FOAMED POLYSTYRENE, Thermal insulation, Housing.** See **HOUSING, Insulation, Thermal, Polystyrene, Expanded**

**FOAMED POLYURETHANE.** See **POLYURETHANE, Expanded**

**FOAMED POLYURETHANE, Balloons, Artificial satellites.** See **SATELLITES, Artificial, Balloon, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Chairs, Astronautics vehicles.** See **ASTRONAUTICS, Vehicles, Chairs, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Filters.** See **FILTERS, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Insulation, Pipes.** See **PIPES, Insulation, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Insulation, Refrigeration.** See **REFRIGERATION, Insulation, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Sealants.** See **SEALANTS, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Seats, Motor cars.** See **MOTOR CARS, Seats, Polyurethane, Expanded**

**FOAMED POLYURETHANE, Upholstery.** See **UPHOLSTERY, Polyurethane, Expanded**

**FOAMED POLYURETHANE—DURALUMINIUM, Panels, Bodies, Railcars.** See **RAILCARS, Bodies, Panels, Duraluminium—Polyurethane, Expanded**

**FOCUSING, Cameras.** See **CAMERAS, Focusing**

**FOCUSING, Electron beams.** See **ELECTRON BEAMS, Focusing**

**FOCUSING, X-ray diffractometer attachments.** See **X-RAYS, Diffractometers, Focusing attachments**

**FODEN LORRIES.** See **LORRIES, Types, Foden**

**FOETAL HEART.** See **HEART, Foetal**

**FOG, Air pollution**

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**FOG, Shipping collisions.** See **SHIPPING, Collisions, Fog**

**FOG LAMPS, Motor cars.** See **MOTOR CARS, Lamps, Fog**

**FOIL, Aluminium, Fracture, Studies, Microscopy**

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**FOIL, Aluminium, Range measurement, Mono-energetic electron beams.** See **ELECTRON BEAMS, Mono-energetic, Range measurement, Aluminium foil**

**FOIL, Aluminium, Rolling**

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**FOIL, Aluminium, Thermal insulating materials**

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**FOIL, Aluminium—Copper, Aged, Fracture, Studies, Microscopy**

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**FOIL, Metal, Irradiation, Studies, Electron microscopy, Ion guns**

Low energy ion gun for bombarding small specimens. P. Bowden & D. G. Brandon. J. of Scientific Instruments, 40 (May 63) p.213-15. il. refs.

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**FOIL, Metal (Microscopy, Electron, Transmission) Electro-polishing, Holders, P.T.F.E.**

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FOIL, Metal, Resistance strain gauges. See STRAIN GAUGES, Resistance, Foil

**FOIL, Metal, Rolling, Lord mills**

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FOKKER F-28 AIRCRAFT. See AIRCRAFT, Types, Fokker F-28

FOLDED STAPLE, Rayon yarns, Conveyor belts. See CONVEYORS, Belts, Yarns, Rayon, Staple, Folded

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**FOOD**

Related Headings:

BAKERIES

BAKERY PRODUCTS

COOKERY

EGGS

FISH

FRUIT

GELATINE, Edible

GRAIN

ICE CREAM

MARGARINE

MEAT

MILK

NUT FOOD

OILS, Edible

POTATOES

POULTRY

PROTEIN, Extraction

**FOOD**

Related Headings—cont.

SEA FOOD

SOUPS

SOYABEANS

SUGAR

SUGARS

SWEETS

VEGETABLES

VITAMINS

**FOOD—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Regulations

Research

Problems

Hygiene

Contamination

Poisoning

Spoilage

Properties

Flavours

Chemistry

Volatile compounds

Technical activities

Analysis

Determination of....

Inspection

Processing

Preservation

Freezing

Freeze-drying

Drying

Colour sorting

Packaging

Labelling

Containers

Cartons

Canning

Cans

Storage

Transport

Distribution

Vending machines

Additives

Flavouring materials

Sweeteners

Types of food

Canned

Frozen

Freeze-dried

Quick frozen

Baby

**FOOD, Additives**

Chemicals in food. A. E. Bender. Research, 15 (Dec 62) p.510-14

**FOOD, Additives, Colour, Analysis**

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**FOOD, Additives, Regulations**

Food additive regulations and international trade. J. F. Mahoney. *Chemistry & Industry* (2 Feb 63) p.178-80

**FOOD, Analysis**

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**FOOD (Baby) Processing, Control systems**

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**FOOD, Canned**

Vive les conserves. *Tin* (Mar 63) p.73-7. il.

**FOOD, Canning**

Factor of safety. W. Richards. *Tin-Printer & Box Maker*, 39 (Aug 63) p.4

Straight-through processing. "Metalia". *Canning & Packing*, 33 (Sep 63) p.6

**FOOD, Canning, Codes of practice**

Code of practice for canners. *Canning & Packing*, 33 (Jun 63) p.19

**FOOD, Canning, Industry, Northern Ireland**

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**FOOD, Canning, Mechanical handling**

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Food handling time and costs slashed [Clarktor] *Mechanical Handling*, 50 (Nov 63) p.627-8. il.

**FOOD, Canning, Microbiology**

Microbiology for the canner: examination and control of finished products. S. M. Charlett. *Canning & Packing*, 33 (Jan 63) p.8-9. il.

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Microbiology for the canner: examination and control of finished products (contd.) S. M. Charlett. *Canning & Packing*, 33 (Jun 63) p.12-13

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FRUIT

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FUMES, Paint manufacture. See PAINT, Manufacture, Fumes

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FUMIGATION, Bagged decorticated groundnuts. See

GROUNDNUTS, Decorticated, Bagged, Fumigation

FUNCTION SYNTHESISERS, Waveforms. See WAVEFORMS, Function synthesisers

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COPPER-MANEB

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FUNGICIDES, Corks, Bottles. See BOTTLES, Corks, Fungicides

FUNNELS, Liquid solvent extraction. See SOLVENT EXTRACTION, Liquid, Funnels

FURANE, Resins, Binders, Cores, Moulds. See MOULDS, Cores, Binders, Furane resin

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**FURNACES**

Related Headings:

CUPOLAS

STOVES, Hot blast

**FURNACES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Kinds of furnace

*Cylindrical*

*Pulverised coal fired*

*Gas fired*

*Oil fired*

*Electric*

*Arc*

*Induction*

*Blast*

*Open hearth*

*Vacuum*

Applications

*Boilers*

FURNACES, Annealing, Copper alloys. See COPPER, Alloys, Annealing, Furnaces

FURNACES, Annealing, Steel strips, Coils. See COILS, Strips, Steel, Annealing, Furnaces

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**FURNACES, Arc, Vacuum melting, Steel.** See STEEL, Melting, Vacuum, Furnaces, Arc

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#### **FURNACES, Blast**

Related Headings:

PELLETS, Coke-Iron ore

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Cheaper steelmaking with "I-coal" Fuel Efficiency, 11 (Feb 63) p.45. il.

I-coal preparation plant at Mapperley. Colliery Engng., 40 (Feb 63) p.60-1. il.

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Coal-oil slurry injection into blast furnaces [Stanton & Staveley, Ltd.] C. W. J. Crawford. Steel & Coal, 187 (26 Jul 63) p.174-5

Packaged injection pumping unit for coal-oil slurry in blast furnace operation. Pumping, 5 (Aug 63) p.427+. il.

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#### **FURNACES, Copper, Billets.** See BILLETS, Copper, Furnaces

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- FURNACES, Electric, Annealing, Engines, Liquid fuelled rockets.** See **ROCKETS, Liquid fuelled, Engines Annealing, Furnaces, Electric**
- FURNACES, Electric, Control systems, Rectifiers, Controlled**  
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- FURNACES, Electric, Melting, Glass.** See **GLASS, Melting, Furnaces, Electric**
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- FURNACES, Electric, Windings**  
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- FURNACES, Forging, Ingots.** See **INGOTS, Forging, Furnaces**
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- FURNACES, Gas-fired**  
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- FURNACES, Gas-fired, Heat treatment, Steel.** See **STEEL, Heat treatment, Furnaces, Gas-fired**
- FURNACES, Gas-fired, Heat treatment, Steel, Rolls.** See **ROLLS, Steel, Heat treatment, Furnaces, Gas-fired**
- FURNACES, Gas fired, Heat treatment, Steel, Strips.** See **STRIPS, Steel, Heat treatment, Furnaces, Gas fired**
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- FURNACES, Gas-fired, Melting, Assaying, Silver.** See **SILVER, Assaying, Melting, Furnaces, Gas-fired**
- FURNACES, Gas-fired, Mills, Rolling, Aluminium.** See **ALUMINIUM, Rolling, Mills, Furnaces, Gas-fired**
- FURNACES, Gas-fired, Quenching, Heat treatment, Motor cycle parts.** See **MOTOR CYCLES, Parts, Heat treatment, Quenching, Furnaces, Gas-fired**
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- FURNACES, Induction, Melting, Steel.** See **STEEL, Melting, Furnaces, Induction**
- FURNACES, Induction, Melting, Swarf, Cast iron.** See **IRON, Cast, Swarf, Melting, Furnaces, Induction**
- FURNACES, Induction, Vacuum melting.** See **MELTING, Vacuum, Furnaces, Induction**
- FURNACES, Iron production.** See **IRON, Production, Furnaces**
- FURNACES, Melting.** See **MELTING, Furnaces**
- FURNACES, Melting, Aluminium.** See **ALUMINIUM, Melting, Furnaces**
- FURNACES, Melting, Refractory metals.** See **METALS, Refractory, Melting, Furnaces**
- FURNACES, Oil-fired**  
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Reheating, Furnaces

**FURNACES, Reverberatory, Melting, Aluminium.** See ALU-  
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**FURNACES, Rotary, Melting, Nodular iron.** See IRON, Nodu-  
lar, Melting, Furnaces, Rotary

**FURNACES, Shaft, Sintering, Ores, Iron.** See IRON, Ores,  
Sintering, Furnaces, Shaft

**FURNACES, Steel, Billets.** See BILLETS, Steel, Furnaces

**FURNACES, Steel production.** See STEEL, Production,  
Furnaces

**FURNACES, Tubes, Cracking, Ethane production.** See  
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Furnaces

**FURNACES, Vacuum, Melting.** See MELTING, Vacuum,  
Furnaces

**FURNACES, Water tube boilers.** See BOILERS, Water tube,  
Furnaces

**FURNACES, Welding, Steel tubes.** See TUBES, Steel, Welding,  
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**FURNISHINGS**

Related Headings:  
CURTAINS  
SHELVES  
UPHOLSTERY

**FURNISHINGS, Fabrics**

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BEDS  
CHAIRS  
COAT RACKS  
DESKS  
SETTEES  
STORAGE FURNITURE  
WARDROBES

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Specification of adhesives in furniture and joinery. Archi-  
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**FURNITURE, Bedrooms.** See BEDROOMS, Furniture

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New designs in furniture. Wood, 28 (Mar 63) p.97-100. il.

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**GAS (Town)**

Related Headings:

COKE, Ovens, Gas

GAS-HOLDERS

PRODUCER GAS

SYNTHESIS GAS

WATER GAS

**GAS (TOWN)—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

**Particular localities**

Italy

*Naples*

Russia

*Australia*

**Organisations**

Education

Research

*Laboratories*

**Properties**

Combustion

*Odour*

**Technical activities**

Analysis

*Gas chromatography*

Calorimetry

Production

*Purification*

*Drying*

Storage

Distribution

*Pumping*

Pipes

*Pipelines*

*Mains*

*Service pipes*

Compressors

*Meters*

**Constituents**

Equipment

*Appliances*

*Burners*

*Combustion chambers*

*Pulse combustors*

**GAS (Town)** Air conditioning plant. See AIR CONDITIONING, Plant, Gas operated

**GAS (Town)** Air heating. See AIR HEATING, Gas-fired

**GAS (Town) Appliances, History**

One hundred years of domestic gas usage. L. T. Minchin. *Gas & Coke*, 25 (May 63) p.220-3

**GAS (Town) Appliances, Installation**

Future role of the gas fitter? (abstracts) K. P. Pomfrett.

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**GAS (Town) Appliances, Research**

Gas research: summary of "Domestic gas utilisation research and development". L. W. Andrew. *Gas & Coke*, 25 (Jun 63) p.243+. il.

**GAS (Town) Appliances, Standards**

Unification of standards of certification of domestic gas appliances and attendant problems. J. Kec. *Gas J.*, 316 (11 Dec 63) p.345-7

**GAS (Town) Appliances, Temperature control**

Indicating temperature controllers ['Gas-Stat'] *Gas World*, 157 (15 Jun 63) p.89-90. il.

**GAS (Town) Appliances, Testing**

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**GAS (Town)** Biscuit kilns, Pottery. See POTTERY, Kilns, Biscuit, Gas-fired

**GAS (Town)** Boilers. See BOILERS, Gas-fired

**GAS (Town)** Boilers, Heating, Tobacco processing. See TOBACCO, Processing, Heating, Boilers, Gas-fired

**GAS (Town) Burners**

Air blast tunnel burner. *Coke & Gas*, 25 (May 63) p.119-22. il.

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Flat flames. L. T. Mitchin. *Gas World*, 158 (9 Nov 63) p.613. il. refs.

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**GAS (Town) Burners, Tube firing**

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**GAS (Town) Calorimetry**

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**GAS (Town)** Catering equipment. See CATERING, Equipment, Gas-fired

**GAS (Town) Combustion**

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**GAS (Town) Combustion, Control systems**

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Application of combustion control techniques (abstracts) P. G. Atkinson & P. F. Aris. *Gas (Gas Publications)* 26 (Dec 63) p.15+

**GAS (Town) Combustion, Reversion pressure, Recorders**

Reversion pressure recorder. V. P. Davy. *Gas J.*, 315 (7 Aug 63) p.146-7. il. ref.



**GAS (Town) Combustion chambers, Air inlets**

Air inlets: post-aerated burners in natural draught combustion chambers. E. Thornton & P. A. Chester. *Gas J.*, 315 (4 Sep 63) p.204-6

**GAS (Town) Compressors, Alternators, Diesel engines**

St. Albans power economy and standby plant. *Gas World*, 158 (26 Oct 63) p.517-18. il.

**GAS (Town) Constituents, Iron carbonyl**

Nickel and iron carbonyls in town gas. L. S. Cooper, A. B. Densham & M. W. Tanner. *Gas J.*, 316 (27 Nov 63) p.289-93

**GAS (Town) Constituents, Nickel carbonyl**

Nickel and iron carbonyls in town gas. L. S. Cooper, A. B. Densham & M. W. Tanner. *Gas J.*, 316 (27 Nov 63) p.289-93

**GAS (Town) Distribution**

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**GAS (Town) Distribution, Control systems**

Ruhrgas computer solves consumers' problems. J. Wicks. *Gas World* (27 Apr 63) p.506

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**GAS (Town) Distribution, Winter**

Distribution means service to the public. *Gas World*, 158 (2 Nov 63) p.569+

**GAS (Town) Distribution, Work study**

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**GAS (Town) Education**

Development of industrial education in the gas industry. A. B. Badger. *Gas & Coke*, 25 (May 63) p.191+

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**GAS (Town) Equipment—cont.**

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Processing of heat sensitive materials. *Gas (Gas Publications)* 26 (Jan 63) p.21-2. refs.

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Specialist gas-fired equipment for commerce and industry. *Gas World*, 158 (26 Oct 63) p.519-22. il.

**GAS (Town) Equipment, Leather**

Research on leathers used in domestic gas equipment. *Gas J.*, 313 (16 Jan 63) p.83-4

**GAS (Town) Equipment, Manufactures**

Incandescent, Limited—a company profile. *Gas & Coke*, 25 (May 63) p.210-16. il.

**GAS (Town) Equipment, Servicing, Depots**

West Midlands set a high standard at Lord Street Service Depot. *Gas Times*, 97 (Jan 63) p.17-18. il.

**GAS (Town) Firing, Incinerators, Refuse.** See **REFUSE, Incinerators, Gas-fired**

**GAS (Town) Furnaces.** See **FURNACES, Gas-fired**

**GAS (Town) Furnaces, Forging.** See **FORGING, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Heat treatment.** See **HEAT, Treatment, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Heat treatment, Pressure vessels.** See **PRESSURE VESSELS, Heat treatment, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Heat treatment, Steel.** See **STEEL, Heat treatment, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Heat treatment, Steel, Rolls.** See **ROLLS, Steel, Heat treatment, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Heat treatment, Steel, Strips.** See **STRIPS, Steel, Heat treatment, Furnaces, Gas fired**

**GAS (Town) Furnaces, Melting.** See **MELTING, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Melting, Aluminium.** See **ALUMINIUM, Melting, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Melting, Aluminium alloys.** See **ALUMINIUM, Alloys, Melting, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Melting, Assaying, Gold.** See **GOLD, Assaying, Melting, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Melting, Assaying, Silver.** See **SILVER, Assaying, Melting, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Mills, Rolling, Aluminium.** See **ALUMINIUM, Rolling, Mills, Furnaces, Gas-fired**

**GAS (Town) Furnaces, Quenching, Heat treatment, Motor cycle parts.** See **MOTOR CYCLES, Parts, Heat treatment, Quenching, Furnaces, Gas-fired**

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**GAS (Town) Heaters, Air drying.** See **AIR DRYING, Heaters, Gas-fired**

**GAS (Town) Heating.** See **HEATING, Gas-fired**

**GAS (Town) Heating, Abrasives manufactures, Shot-blasting.** See **SHOT-BLASTING, Abrasives, Manufactures, Heating, Gas**

**GAS (Town) Heating, Baking, Cake.** See **CAKE, Baking, Heating, Gas-fired**

**GAS (Town) Heating, Buildings.** See **BUILDINGS, Heating, Gas**

**GAS (Town) Heating, Can manufactures, Food.** See **FOOD, Cans, Manufactures, Heating, Gas-fired**

- GAS (Town) Heating, Factories. See FACTORIES, Heating, Gas-fired
- GAS (Town) Heating, Flats. See FLATS, Heating, Gas
- GAS (Town) Heating, Foundries, Investment casting. See CASTING, Investment, Foundries, Heating, Gas-fired
- GAS (Town) Heating, Foundry practice. See FOUNDRY PRACTICE, Heating, Gas-fired
- GAS (Town) Heating, Furnaces, Annealing, Copper alloys. See COPPER, Alloys, Annealing, Furnaces, Gas-fired
- GAS (Town) Heating, Glass manufactures. See GLASS, Manufactures, Heating, Gas-fired
- GAS (Town) Heating, Glass manufactures, Bottles. See BOTTLES, Glass, Manufactures, Heating, Gas-fired
- GAS (Town) Heating, Glass manufactures, Lamps, Motor cars. See MOTOR CARS, Lamps, Glass, Manufactures, Heating, Gas-fired
- GAS (Town) Heating, Glass manufactures, Tubes, Receivers, Television. See TELEVISION, Receivers, Tubes, Glass, Manufactures, Plant, Gas-fired
- GAS (Town) Heating, Glass reflector manufacture, Roads. See ROADS, Reflectors, Glass, Manufactures, Heating, Gas fired
- GAS (Town) Heating, Houses. See HOUSES, Heating, Gas
- GAS (Town) Heating, Housing. See HOUSING, Heating, Gas
- GAS (Town) Heating, Lubricating grease manufactures. See LUBRICATING GREASES, Production, Heating, Gas
- GAS (Town) Heating, Mirror manufacture. See MIRRORS, Manufactures, Heating, Gas-fired
- GAS (Town) Heating, Nylon yarn manufactures. See YARNS, Nylon, Manufactures, Heating, Gas-fired
- GAS (Town) Heating, Silverware manufactures. See SILVERWARE, Manufactures, Heating, Gas fired
- GAS (Town) Heating, Smoking, Bacon. See BACON, Smoking, Heating, Gas fired
- GAS (Town) Heating, Steel production plant manufactures. See STEEL, Production, Plant, Manufactures, Heating, Gas-fired
- GAS (Town) Heating, Tall buildings. See BUILDINGS, Tall, Heating, Gas
- GAS (Town) Heating, Water. See WATER, Heating, Gas

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- GAS (Town) Hot dip galvanising, Steel. See STEEL, Galvanising, Hot dip, Heating, Gas-fired
- GAS (Town)-Induction heated furnaces, Forging, Steel. See STEEL, Forging, Furnaces, Dual fuel, Gas-Induction heated

### GAS (Town) Industry

- Retrospect on 1962. *Gas World*, 157 (5 Jan 63) p.49+

### GAS (Town) Industry, Great Britain

- How goes gas? Heating & Air Conditioning, 30 (Jun 63) p.431
- GAS (Town) Kilns, Lime. See LIME, Kilns, Gas-fired
- GAS (Town) Kilns, Pottery. See POTTERY, Kilns, Gas-fired

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### GAS (Town) Mains, Leaks, Detection

- Electronic system pin points underground gas leaks. *Gas World*, 157 (13 Apr 63) p.449. il.
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- Plant rooms: housings for gas meters. *Architects' J.*, 138 (23 Oct 63) information sheet 1221. il.

### GAS (Town) Naples

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- First hundred years (1863-1963) J. G. King. *Gas Times*, 97 (May 63) p.7-8. il.
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- GAS (Town) Ovens, Baking, Confectionery. See CONFECTIONERY, Bakery products, Baking, Ovens, Gas-fired
- GAS (Town) Ovens, Drying, Paint. See PAINT, Drying, Ovens, Gas-fired
- GAS (Town) Ovens, Drying, Paint, Drying cabinets, Clothing. See CLOTHING, Drying cabinets, Paint, Drying, Ovens, Gas fired
- GAS (Town) Ovens, Drying, Plates, Lead, Batteries. See BATTERIES, Lead, Plates, Drying, Ovens, Gas-fired
- GAS (Town) Ovens, Stoving, Paint, Boilers, Heating, Housing. See HOUSING, Heating, Boilers, Paint, Stoving, Ovens, Gas
- GAS (Town) Ovens, Stoving, Painting, Radiators. See RADIATORS, Painting, Stoving, Ovens, Gas
- GAS (Town) Ovens, Stoving, Plastic linings, Pipes, Refineries, Petroleum. See PETROLEUM, Refineries, Pipes, Linings, Plastics, Stoving, Ovens, Gas fired

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- Method of erecting a pipe bridge over river and canal. *Gas Times*, 97 (Mar 63) p.15-16. il.
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- Protection of steel pipes for the conveyance of gas (abstracts) J. F. Galt. *Gas World*, 89 (9 Feb 63) p.211+
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**GAS (Town) Pipelines, Underwater**

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**GAS (Town) Pipelines, Wales**

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**GAS (Town) Pipes, Acetal resin**

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Inexpensive sampling device for gas chromatography. T. Doran & A. D. Sperrin. *Analyst*, 88 (Sep. 63) p.738-9. il. refs.

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**GAS CHROMATOGRAPHY**, Sulphur trioxide determination. See **SULPHUR TRIOXIDE**, Determination, Gas chromatography

**GAS CHROMATOGRAPHY**, Thermal decomposition, Plastics. See **PLASTICS**, Thermal decomposition, Products, Gas chromatography

**GAS CHROMATOGRAPHY**, Town gas. See **GAS (Town)** Gas chromatography

**GAS CHROMATOGRAPHY**, Toxic combustion products. See **COMBUSTION**, Products, Toxic, Gas chromatography

**GAS CHROMATOGRAPHY**, Triterpene alcohols. See **TRITERPENE ALCOHOLS**, Gas chromatography

**GAS CHROMATOGRAPHY**, Volume determination, Gases, Vacuum fusion semi-microanalysis. See **SEMI-MICRO-ANALYSIS**, Vacuum fusion, Gases, Volume determination, Gas chromatography

**GAS CONCRETE**. See **CONCRETE**, Gas

**GAS COOLED NUCLEAR REACTORS**. See **NUCLEAR REACTORS**, Gas cooled

### **GAS DISCHARGE**

Related Headings:

PLASMA MACHINES

PLASMAS

TOWNSEND DISCHARGE

### **GAS DISCHARGE, Avalanches, Current pulses, Analysis**

Analysis of pre-breakdown current pulses in gas discharge gaps. D. T. A. Blair, F. M. Bruce & D. J. Tedford. *Proc. of Instn. of Electrical Engrs.*, 110 (Nov 63) p.2073-81. il. refs.

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- GAS DISCHARGE**, Iodine. See IODINE, Gas discharge
- GAS DISCHARGE**, Magnetic flux, Measurement, Search coils  
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- GAS DISCHARGE TUBES**. See ELECTRON TUBES, Gas discharge
- GAS ENGINES**  
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- GAS FLOW**, Blunt bodies. See BLUNT BODIES, Gas flow
- GAS FLOW**, Bubbles, Gas-liquid fluidised beds. See FLUIDISED BEDS, Gas-liquid, Bubbles, Gas flow
- GAS FLOW**, Furnaces, Boilers. See BOILERS, Furnaces, Gas flow
- GAS FLOW**, Laminar, Pipes, Self-diffusion coefficient  
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ROTAMETERS
- GAS FLOW**, Meters, Mass  
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- GAS FLOW**, Stagnation, Temperature  
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- GAS GENERATORS**  
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- GAS-HOLDERS**, Maintenance, Paint  
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- GAS HYDRATES**. See HYDRATES, Gas
- GAS HYDRATES**, Neutron counters. See COUNTERS, Neutron, Gas hydrates
- GAS LASERS**. See LASERS, Gas
- GAS LASERS**, Interferometry, Length measurement. See LENGTH, Measurement, Interferometry, Lasers, Gas
- GAS LIFTS**, Absorption, Carbon dioxide. See CARBON DIOXIDE, Absorption (Gas lifts)
- GAS-LIQUID CHEMICAL REACTORS**. See CHEMICAL REACTORS, Gas-liquid
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- GAS-LIQUID CHROMATOGRAPHY**, Essential oils. See ESSENTIAL OILS, Gas-liquid chromatography
- GAS-LIQUID CHROMATOGRAPHY**, Fat, Pachira aquatica seed. See PACHIRA AQUATICA, Seed, Fat, Gas-Liquid chromatography
- GAS-LIQUID CHROMATOGRAPHY**, Hydrocarbons. See HYDROCARBONS, Gas-liquid chromatography
- GAS-LIQUID CHROMATOGRAPHY**, Methyl cyclohexane. See METHYL CYCLOHEXANE, Gas-liquid chromatography
- GAS-LIQUID CHROMATOGRAPHY**, Oils. See OILS, Gas-liquid chromatography
- GAS-LIQUID CHROMATOGRAPHY**, Organic peroxides determination. See PEROXIDES, Organic, Determination, Gas-liquid chromatography
- GAS-LIQUID CHROMATOGRAPHY**, Volatile materials, Fruit. See FRUIT, Volatile materials, Gas-liquid chromatography
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- GAS-LIQUID SYSTEMS**  
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BUBBLES  
DROPLETS
- GAS-LIQUID SYSTEMS**, Flow, Pipes, Vertical  
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- GAS-LIQUID SYSTEMS**, Fluidised beds. See FLUIDISED BEDS, Gas-liquid
- GAS MASS SPECTROMETERS**. See MASS SPECTROMETERS, Gas
- GAS OIL**, Furnaces, Heat treatment, Steel. See STEEL, Heat treatment; Furnaces, Gas oil fired



**GAS OIL, Spectrophotometry, Reagents, Aniline acetate**

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**GAS-STEAM TURBINES, Anti-missile destroyers. See DESTROYERS, Anti-missile, Steam-Gas turbines****GAS-STEAM TURBINES, Frigates. See FRIGATES, Steam-Gas turbines****GAS TURBINE LAUNCHES. See LAUNCHES (Gas turbine)****GAS TURBINE LOCOMOTIVES. See LOCOMOTIVES, Gas turbine****GAS TURBINES**

Gas turbine as an industrial prime mover, pt.3. H. A. S. Gothard. *Power & Works Engng.*, 57 (Dec 62) p.16-23. il. refs.

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Structural details of complex American design [Ford 705] *Oil Engine & Gas Turbine*, 30 (Mid Apr 63) p.412-13. il.

**GAS TURBINES****Related Headings:**

GAS GENERATORS

LIFT ENGINES

TURBOFANS

TURBOJETS

TURBOPROPS

**GAS TURBINES-SUBHEADINGS-Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

**Processes***Testing**Combustion**Regeneration cycles***Materials***Chromium-Nickel***Components***Ducting**Compressors**Guide vanes**Fuel systems**Combustion chambers**Heat exchangers***Types***Coal fired***Applications***Pumps**Vehicles**Aircraft**Helicopters**Ships**Motor vehicles**Motor cars**Electric power generation**Alternators***GAS TURBINES, Aircraft**

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British aircraft gas turbines. *Oil Engine & Gas Turbine*, 30 (Mar 63) p.381-6. il.

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**GAS TURBINES (Aircraft) Blades, Nickel alloy**

Vacuum melted and cast alloys EPK 36 and EPD 16: data sheet no.113. *Engng. Materials & Design*, 6 (Sep 63) p.677+



**GAS TURBINES (Aircraft) Components, Casting, Investment**

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**GAS TURBINES (Aircraft) Compressors, Axial-flow, Coolants, Injection**

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**GAS TURBINES (Aircraft) Fuels, Pumps, Centrifugal**

Vapour-core pump [Dowty Fuel Systems] *Flight*, 83 (14 Mar 63) p.364-6. il.

**GAS TURBINES (Aircraft) Lubricating oils**

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**GAS TURBINES (Aircraft) Noise, Measurement**

Estimating jet noise. G. M. Coles. *Aeronautical Q.*, 14 (Feb 63) p.1-16. il. refs.

**GAS TURBINES (Aircraft) Nozzles, Slots, Machining**

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**GAS TURBINES (Aircraft) Rotors, Bearings, Spring**

Whirling with spring bearings and rough snubbers. B. Irons. J. of R. Aeronautical Soc., 67 (Jan 63) p.66-7. il. refs.

**GAS TURBINES (Aircraft) Superalloys**

Superalloys now go on the mass production line. *Tin* (Jan 63) p.9-10. il.

**GAS TURBINES (Aircraft) Testing, Pipes, Joints, Flexible**

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**GAS TURBINES (Aircraft) Testing, Plant**

Engine test plant [Heenan and Froude Ltd.] *Aircraft Engrg.*, 35 (Aug 63) p.225. il.

**GAS TURBINES (Aircraft) Torque meters, Corrosion, Fretting, Test rigs, Design**

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**GAS TURBINES (Aircraft) Wheels, Welded**

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**GAS TURBINES, Alternators**

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Stationary plant for intermittent duty [Bristol Siddeley MW] *Oil Engine & Gas Turbine*, 31 (May 63) p.65-6. il. ref.

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**GAS TURBINES (Alternators) Waste heat recovery**

Austrian gas turbine-steam cycle. J. Grindrod. *Engrg. & Boiler House Rev.*, 78 (Aug 63) p.290-2. il.

**GAS TURBINES, Chromium-Nickel, Corrosion**

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**GAS TURBINES, Combustion chambers**

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**GAS TURBINES, Compressors, Tests**

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**GAS TURBINES, Ducting**

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**GAS TURBINES, Fuel systems**

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**GAS TURBINES (Helicopters) Exhaust casings, Nimonic alloys, Machining**

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**GAS TURBINES (Helicopters) Fuels, Control systems**

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**GAS TURBINES (Helicopters) Gears, Grinding, Machines**

Involute form grinding at the works of Bristol Siddeley. F. J. Robinson. *Machinery*, 102 (5 Jun 63) p.1281-6. il.

**GAS TURBINES, Motor boats.** See **BOATS, Motor, Gas turbine**

**GAS TURBINES, Motor cars**

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Chrysler gas turbine car [two-door hardtop model] R. F. Ansdale. *Automobile Engr.*, 53 (Nov 63) p.484-9. il.

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**GAS TURBINES, Planing motor boats.** See **BOATS, Motor (Planing) Gas turbines**

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**GAS TURBINES, Pumps**

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GELS, Formation, High temperature, Mastication, Neoprene.

See NEOPRENE, Mastication, High temperature, Gel formation

GELS, Formation, Irradiation, P.V.C. film. See FILM, P.V.C., Irradiation, Gel formation

GELS, Gel filtration. See GEL FILTRATION, Gels

**GELS, Gelatin, Sedimentation**

Sedimentation studies of gelatin gels. P. Johnson & J. C. Metcalfe. *J. of Photographic Science*, 2 (Jul/Aug 63) p.214-24. il. refs.

**GELS, Polymethacrylic acid-Water**

Gelation of aqueous solutions of polymethacrylic acid. J. Eliassaf & A. Silberberg. *Polymer*, 3 (Dec 62) p.555-64. refs.

**GELS, Titania, Surfaces**

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GELS, Tobermorite, Constituents, Cement. See CEMENT, Constituents, Tobermorite gel

**GELSENKIRCHEN**

See

THEATRES, Gelsenkirchen

**GEMS**

Related Headings:

PEARLS

TURQUOISE

**GEMS, Artificial**

Synthetic and other man-made gems. R. J. Holmes.

*Horological J.* (Jan 63) p.43-4. il.

Synthetic and other man-made gems, pt.2. R. J. Holmes.

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**GEMS, Cutting**

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**GEMS, Identification**

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**GEMS, Mining, Thailand**

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**GEMS, Museums**

Trust collection of gems used by trainee jewellers. R. W. Yeo. *Horological J.*, 105 (Nov 63) p.369-70

**GEMS, Spectroscopy, Absorption, Equipment**

Tests with a Zeiss hand spectroscope. B. W. Anderson. *Horological J.* (Feb 63) p.74-5. il.

**GEMS, Testing, Polariscopes**

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**GENERAL MOTORS CORPORATION. Chevrolet Motor Division**

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P.O. Telecommunications J., 15 (Autumn 63) p.7-9

**GENERAL POST OFFICE. Central Telegraph Office**

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**GENERAL POST OFFICE. Engineering Department.****Technical Support Unit**

Which computers?—the TSU helps to find the answer.

J. W. Freebody. P.O. Telecommunications J., 15

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Related Headings:

ALTERNATORS

**GENERATORS, Electrical, Aircraft**

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Related Headings:

MAGNETOS

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Acyclic generator—a new d.c. power generation tool for industry. J. R. Burnett & F. L. Kaestle. *Direct Current*, 8 (Jul 63) p.196-201. il.

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**GENERATORS, Electrical, D.C., Oceanography research ships.**

See SHIPS (Oceanography research) Generators, Electrical, D.C.

**GENERATORS, Electrical, D.C., Rectifiers, Diodes, Silicon**

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**GENERATORS, Electrical, Direct conversion**

Related Headings:

ELECTRON TUBES, Thermionic, Power generators  
FUEL CELLS

MAGNETOHYDRODYNAMICS, Generators

THERMOELECTRICITY, Liquids, Power generation

THERMOELECTRICITY, Power generation

GENERATORS, Electrical, Direct conversion, Power supplies, Vehicles, Astronautics. See ASTRONAUTICS, Vehicles, Power supplies, Direct conversion generators

GENERATORS, Electrical, Electrostatic, Propulsion, Astronautic vehicles. See ASTRONAUTICS, Vehicles, Propulsion, Electric, Generators, Electrostatic

**GENERATORS, Electrical, Fuels, Gases**

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**GENERATORS, Electrical, Prime movers**

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GENERATORS, Electrical, Short circuit tests, Circuit breakers. See CIRCUIT BREAKERS, Short circuits, Tests, Generators

GENERATORS, Gas. See GAS GENERATORS

GENERATORS, Harmonic, Millimetre frequency. See

MILLIMETRE WAVE FREQUENCY, Generators, Harmonic

GENERATORS, Impulse. See IMPULSES, Voltage, Generators

GENERATORS, Pulses. See PULSES, Generators

GENERATORS, Pulses, Electronic stimulators. See STIMULATORS, Electronic, Pulse generators

GENERATORS, Pulses, Single shot operation, Magnetrons.

See MAGNETRONS, Single shot operation, Pulse generators

GENERATORS, R.F. heating, Wood manufactures. See WOOD, Manufactures, Heating, R.F., Generators

GENERATORS, Rectangular pulses. See PULSES, Rectangular, Generators

GENERATORS, Signals, Audio frequency. See AUDIO FREQUENCY, Signal generators

GENERATORS, Square pulses. See PULSES, Square, Generators

GENERATORS, Transistor, Staircase waveforms, Counter circuits. See COUNTERS, Circuits, Waveforms, Staircase, Generators, Transistor

GENERATORS, Waveforms. See WAVEFORMS, Generators

GENERATORS, Waveforms, Control systems, Electric power systems. See ELECTRIC POWER SYSTEMS, Control systems, Waveform generators

## GENOA

See

DOCKS, Dry, Genoa

GEOCHEMICAL PROSPECTING, Mining, Metals. See

METALS, Mining, Prospecting, Geochemical

GEODESIC DOMES. See DOMES, Geodesic

GEODIMETERS, Measurement, Shafts, Coal mining. See COAL,

Mining, Shafts, Measurement, Geodimeters

GEOLOGY, Dam sites. See DAMS, Sites, Geology

GEOLOGY, Undersea mining, Coal. See COAL, Mining, Undersea, Geology

GEOLOGY, Water resources. See WATER, Resources, Geology

GEOMAGNETIC ELECTRICAL GENERATORS. See GENERATORS, Electrical, Geomagnetic

GEOPHYSICAL PROSPECTING, Petroleum. See PETROLEUM, Prospecting, Geophysical method

## GEOPHYSICAL RESEARCH

Related Headings:

SOLAR AZIMUTH

SOLAR ZENITH DISTANCE

GEOPHYSICAL RESEARCH, Equipment

Related Headings:

AURORA BOREALIS, Photography

## GEOPHYSICAL RESEARCH, Telemetering

Radio and international geophysical research (abstracts)

R. L. Smith-Rose. *Nature*, 199 (6 Jul 63) p.11-15

GEOPHYSICAL SURVEYING, Ground water. See GROUND

WATER, Surveying, Geophysical

## GEOPHYSICS

Related Headings:

ATMOSPHERE

## GEOPHYSICS, Laboratories

Geophysical company completes its laboratory expansion

[Lea Cross Company's facilities at Hanwood] *Mining*

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GEORGETOWN (British Guiana)

See

POWER STATIONS, Georgetown (British Guiana)

GEOTECHNICS. See EARTHWORK

GEO THERMAL POWER STATIONS. See POWER STATIONS, Geothermal

## GERANIUM OIL, Gas chromatography

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Howard. *Analyst*, 88 (Aug 63) p.633-42. il. refs.

## GERMANIUM, Crystals, Ribbon growing

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GERMANIUM, Determination, Coal. See COAL, Determination of germanium

GERMANIUM, Diffused-base transistors. See TRANSISTORS, Diffused-base, Germanium

GERMANIUM, Junction transistors. See TRANSISTORS, Junction, Germanium

GERMANIUM, Semiconductors. See SEMICONDUCTORS, Germanium

## GERMANIUM DIOXIDE, Determination of arsenic

Determination of arsenic in germanium dioxide (extracts)

E. W. Fowler. *Analyst*, 88 (May 63) p.380-6. refs.

## GERMANY

See

ARCHITECTURE, West Berlin

ARCHITECTURE, West Germany

BAUHAUS

BRIDGES, Rhineland

BUILDING, Education, Universities, West Germany

BUILDING, Education, West Germany

BUILDINGS, Prefabricated, West Germany

## GERMANY

See—cont.

CHURCHES, Berlin

DATA PROCESSING, East Germany

DATA PROCESSING, West Germany

DIODES, Semiconductors, Manufactures, West Germany

ELECTRIC POWER SYSTEMS, West Germany

ELECTROPLATING, Germany

FIRE SERVICES, Hamburg

FLATS, Bremen

FLATS, Hamburg

FLATS, Stuttgart

FLOUR, Milling, West Germany

HOUSING, Quickborn

HYDROELECTRIC POWER STATIONS, Pumped storage, Germany

LIGNITE, Mining, Opencast, East Germany

LOCOMOTIVES, Diesel, West Germany

LOCOMOTIVES, Diesel-electric, West Germany

LOCOMOTIVES, Diesel-hydraulic, West Germany

MAN-MADE FIBRES, Manufactures, East Germany

MARKETS, Buildings, Hamburg

MECHANICAL HANDLING, Equipment, Germany

MOTOR CARS, Manufactures, Germany

MOTOR CARS, Manufactures, West Germany

MOTORWAYS, West Germany

OLEFINS, Petrochemicals, Production, Germany

PETROLEUM, Industry, West Germany

PETROLEUM, Refineries, Frankfurt-am-Main

PETROLEUM, Refineries, Schwedt

PLASTICS, Industry, West Germany

PORTS, Hamburg

RAILWAYS, Bentheim

RAILWAYS, Stations, West Germany

ROADS, Elevated, Germany

ROADS, Intersections, West Germany

ROADS, Rhineland

STEEL, Industry, West Germany

TECHNICAL EDUCATION, Adult, Germany

TECHNOLOGY, Germany

THEATRES, Gelsenkirchen

THEATRES, Münster

THEATRES, West Germany

TIN, Industry, Germany

TOWN HALLS, Ehningen

TOWN PLANNING, West Germany

WATER, Engineering, East Germany

WOOD, Machining, Machine tools, Germany

## GHANA

See

ROADS, Ghana

WATER, Engineering, Swedru

GIBBERELLIC ACID, Effect on barley. See BARLEY, Effect of gibberellic acid

GIBBERELLIC ACID, Gibberellin A production. See GIBBERELLIN A, Production, Gibberellic acid

## GIBBERELLIN A, Production, Gibberellic acid, Reduction

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## GIBBERELLINS, Gas chromatography

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GIDLEY, J. A. F. and ELWELL, W. T. See ELWELL, W. T. and GIDLEY, J. A. F.

## GILA COUNTY

See

COPPER, Mining, Gila County

GILERA JUBILEE MOTOR CYCLES. See MOTOR CYCLES, Types, Gilera Jubilee

GILERA MOTOR CYCLES. See MOTOR CYCLES, Types, Gilera

GILLING, Worsted. See WORSTED, Gilling

# **GILSONITE, Pipelines, U.S.A.**

Operation of a Gilsonite pipeline. Mining J., 261 (23 Aug 63) p.166-8. il.

# **GIN, Distillation**

New distillery and store [Gilbert & John Greenall, Ltd.] Mechanical Handling, 50 (Oct 63) p.533-8. il.

# **GIN, Distilleries**

Structural frame completed at £1 million Harlow distillery. Contract J., 192 (28 Mar 63) p.457+. il.

# **GIN, Instability**

Instability in potable spirits, pt.3: gin and vodka. L. A. Warwicker. J. of Science of Food & Agriculture, 14 (Jun 63) p.371-6. refs.

# **GINGER, Whole, Sacks, Penetration, Insecticides**

Contamination of bagged whole ginger after surface treatment with two synthetic contact insecticides. J. A. McFarlane & L. Donegan. J. of Science of Food & Agriculture, 13 (Dec 62) p.634-8. refs.

# **GINGERGRASS OIL**

Chemical examination of Hyderabad gingergrass oil. M. Swaleh, B. Bhushan & G. S. Sidhu. Perfumery & Essential Oil Record, 54 (May 63) p.295-302. il. refs.

GINNING, Cotton. See COTTON, Ginning

GIRDER BRIDGES, Railways. See RAILWAYS, Bridges, Girder

# **GIRDERS (Bridges) Steel, Corrosion, Inhibitors, Silica gel**

Silica gel prevents corrosion in steel box girders of Samlesbury Bridge. R. Worthington. Surveyor, 122 (12 Jan 63) p.52-5. il.

GIRDERS, Cranes, Ladles, Furnaces, Steel production. See STEEL, Production, Furnaces, Ladles, Cranes, Girders

# **GIRDERS (Cranes) Welded, Fatigue**

Design and service life of the upper part of welded crane girders. A. G. Senior & T. R. Gurney. Structural Engr., 41 (Oct 63) p.301-12. il. refs.

# **GIRDERS, Plates, Web, Steel, Welded, Fatigue**

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# **GIRDERS (Sluice gates) Concrete, Prestressed**

Haringvliet sluices for Holland's Delta Plan ["Nabla"] Dock & Harbour Authority, 43 (Apr 63) p.387-90. il.

# **GIVAUDON, J, and others**

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GLANDS, Coolant, Gun drilling machines. See DRILLING, Machines, Gun, Coolant glands

GLANDS, Sealing, Boosters, Pumping, Town gas. See GAS (Town) Pumping, Boosters, Sealing, Glands

GLARE, Natural lighting. See LIGHTING, Natural, Glare

# **GLASGOW**

See

AIRCRAFT, Engineering, Education, Universities, Glasgow

FLATS, Glasgow

FLATS, Glasgow, Springburn

HOUSING, Glasgow

PORTS, Glasgow

PRINTING, Glasgow

ROADS, Town planning, Glasgow

ROADS, Traffic, Surveys, Glasgow

STRATHCLYDE. UNIVERSITY

TOWN PLANNING, Cowcaddens (Glasgow)

TOWN PLANNING, Glasgow

TOWN PLANNING, Toryglen North (Glasgow)

# **GLASGOW. ROYAL COLLEGE OF SCIENCE AND TECHNOLOGY**

New developments at Glasgow's Royal College. S. C. Curran. Nature, 199 (31 Aug 63) p.843-5. il. refs.

# **GLASGOW. UNIVERSITY**

Three architects design university buildings: Glasgow's Hillhead development has dramatic towers. Surveyor, 122 (12 Oct 63) p.1263-4. il.

# **GLASGOW INSTITUTE OF BIOCHEMISTRY**

Glasgow Institute of Biochemistry. J. S. A. Primrose. Consulting Engr., 24 (Nov 63) suppl. p.40+. il.

# **GLASS**

Related Headings:

ENAMELS

POLYETHYLENE GLYCOL

SILICA, Fused

# **GLASS—SUBHEADINGS—Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

Problems

*Cor's*

Properties

*Strength*

*Stress-strain relationships*

*Viscoelasticity*

*Viscosity*

*Viscometers*

*Fracture*

*Thermal conductivity*

*Ultraviolet absorption*

*Electrical conductivity*

*Resistance*

*Radioactivity*

*Stereochemistry*

Technical activities

*Analysis*

*Manufacture*

*Melting*

*Refining*

*Machining*

Kinds of glass

*By form*

*Plate*

*By material*

*Borate*

*Alkali borate*

*Sodium borate*

*Barium borate*

*Lead borate*

*Borosilicate*

*Boron oxide*

*Alumina-Calcium carbonate-Silicon*

*Potassium oxide-Silica-Titanium dioxide*

*Barium oxide-Silica*

*Silicate*

*Sodium silicate*

*Soda*

*Soda-Lime-Silica*

*Organic*

*By purpose*

*Decorative*

*Stained*

*Safety*

*Optical*

*By process*

*Stabilised*

*Etched*

Applications

*Building materials*



**GLASS, Alkali borate, Molecular structure, Studies, Nuclear magnetic resonance**

Nuclear magnetic resonance investigations of the structure of alkali borate glasses. P. J. Bray & J. G. O'Keefe. *Physics & Chemistry of Glasses*, 4 (Apr 63) p.37-46. il. refs.

**GLASS, Alumina-Calcium carbonate-Silica, Formation, Thermal analysis**

Application of differential thermal analysis and thermogravimetric analysis to the study of reactions between glassmaking materials, pt.4: calcium carbonate-silica-alumina system. R. S. Warburton & F. W. Wilburn. *Physics & Chemistry of Glasses*, 4 (Jun 63) p.91-8. il. refs.

**GLASS, Aluminosilicate, Solutions, Uranium dioxide, Fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Uranium dioxide, Solutions, Aluminosilicate glass****GLASS, Analysis, Physical methods**

Determination of composition from routine physical property measurements. J. O. Isard. *Glass Technology*, 4 (Apr 63) p.45-51. refs.

**GLASS, Balustrades, Spiral staircases. See STAIRCASES, Spiral, Balustrades, Glass****GLASS, Barium borate, X-ray diffraction analysis**

An x-ray study of barium borate glasses. J. Krogh-Moe. *Physics & Chemistry of Glasses*, 3 (Dec 62) p.208-12. il. refs.

**GLASS, Barium oxide-Silica, Liquid, Immiscibility, Studies, Microscopy, Electron**

Liquid immiscibility in the system  $\text{BaO-SiO}_2$ . J. F. Argyle & F. A. Hummel. *Physics & Chemistry of Glasses*, 4 (Jun 63) p.103-5. il. refs.

**GLASS, Blocks, Fluid jet control systems. See**

**CONTROL SYSTEMS, Fluid jet, Blocks, Glass**

**GLASS, Blowing, Laboratories. See LABORATORIES, Glass, Blowing****GLASS, Borate, Melted, Viscosity-Voids correlation**

Viscosity and free volume of fused borates and silicates. S. Kumar. *Physics & Chemistry of Glasses*, 4 (Jun 63) p.106-11. il. refs.

**GLASS, Boron oxide, Infra-red spectroscopy**

Interpretation of the infra-red spectra of vitreous boron oxide. N. F. Borrelli & Gauq-Jen Su. *Physics & Chemistry of Glasses*, 4 (Oct 63) p.206-12. il. refs.

**GLASS, Boron oxide, Infra-red spectroscopy, Studies**

Infra-red spectra of vitreous boron oxide and sodium borate glasses. N. F. Borrelli, B. D. McSwain & Gauq-Jen Su. *Physics & Chemistry of Glasses*, 4 (Feb 63) p.11-21. il. refs.

**GLASS, Borosilicate, Manufactures, Mechanical handling**

Process and handling in making Pyrex glass. H. G. Vallings. *Mechanical Handling*, 50 (Apr 63) p.178-81. il.

**GLASS, Bottles. See BOTTLES, Glass****GLASS, Building materials**

Glass age miscellany. *Glass Age*, 6 (Nov 63) p.40-3. il.

**GLASS, Building materials**

Related Headings:

PISTON RINGS, Foundries, Building materials, Glass

**GLASS, Containers. See CONTAINERS, Glass****GLASS, Containers, Food. See FOOD, Containers, Glass****GLASS, Cords, Optical examination**

Optical techniques to assess inhomogeneities in glass [photoelastic & interferometric methods] L. F. Oldfield. *G.E.C. Journal*, 30 No.3 (1963) p.122-3. il.

**GLASS, Crystallised-Metal, Seals. See SEALS, Glass, Crystallised-Metal****GLASS, Curtain walls. See WALLS, Curtain, Glass****GLASS, Curtain walls, Office buildings. See OFFICE BUILDINGS, Walls, Curtain, Glass****GLASS, Doors, Entrances, Embassies. See EMBASSIES, Entrances, Doors, Glass****GLASS, Electrical conductivity, Effect of ferric ions**

Ionic and electronic conductivity of some new types of glass-like materials. H. J. L. Trap & J. M. Stevels. *Physics & Chemistry of Glasses*, 4 (Oct 63) p.193-205. il. refs.

**GLASS, Envelopes, Vacuum. See VACUUM, Envelopes, Glass****GLASS, Etched, Defects**

Development of defects on etched glass surfaces. B. Wilkinson & B. A. Proctor. *Physics & Chemistry of Glasses*, 3 (Dec 62) p.203-7. il. refs.

**GLASS, External walls, Military buildings. See MILITARY BUILDINGS, Walls, External, Glass****GLASS, Fittings, Lighting. See LIGHTING, Fittings, Glass****GLASS, Fractures**

Whodunnit? how did it break? An identikit for classifying glass fractures. A. Rimmer. *Master Builder*, 81 (Mar 63) p.54-5. il.

**GLASS, Industry, Great Britain**

Expanding British glass industry. P. Elliott. *Brit. Manufacturer*, 47 (Nov 63) p.16+. il.

**GLASS, Lamps, Motor cars. See MOTOR CARS, Lamps, Glass****GLASS, Lanthanum, Lenses, Cameras. See CAMERAS, Lenses, Lanthanum glass****GLASS, Lead borate, Molecular structure, Studies, Nuclear magnetic resonance**

Nuclear magnetic resonance investigations of the structure of lead borate glasses. P. J. Bray, M. Leventhal & H. O. Hooper. *Physics & Chemistry of Glasses*, 4 (Apr 63) p.47-66. il. refs.

**GLASS, Lenses. See LENSES, Glass****GLASS, Machining, Diamond**

Processing hard industrial glass. *Industrial Diamond Rev.*, 23 (Jan 63) p.2-4. il.

**GLASS, Manufactures**

Glass revolution [Pilkington Brothers] *Times Rev. of Industry & Technology*, 1 (Dec 63) p.18+. il.

**GLASS, Manufactures, Air conditioning**

Air conditioning of glass and ceramic plants can boost your profits. P. W. Sherwood. *Glass*, 40 (Sep 63) p.414+

**GLASS, Manufactures, Analysis**

Some examples of the use of chemical analysis in controlling the quality of the final article. J. P. L. Truesdale. *Glass Technology*, 4 (Oct 63) p.139-40

**GLASS, Manufactures, Batch handling**

Glassworks materials handling plant [Rockware Glass Ltd.] *Engineer*, 216 (8 Nov 63) p.762-4. il.

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OLEFINS, Unsaturation, Determination, Halogenation

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**HALOTHANE, Vapour pressure**

- Vapour pressure and vapour density of halothane (2-bromo-2-chloro-1,1,1-trifluoroethane). G. A. Bottomley & G. H. F. Seiflow. *J. of Applied Chemistry*, 13 (Sep 63) p.399-402. ref.

**HAMBLE**

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COLLEGE OF AIR TRAINING, Hamble

**HAMBURG**

See

FIRE SERVICES, Hamburg

FLATS, Hamburg

MARKETS, Buildings, Hamburg

PORTS, Hamburg

**HAMBURGER FLUGZENGBAU HFB320 HANSA AIRCRAFT.**

See AIRCRAFT, Types, Hamburger Flugzeugbau

HFB320 Hansa

HAMILTON, Douglas Douglas-Hamilton, 14th Duke of. See MINISTRY OF AVIATION, Committee on the Recruitment Selection and Training of Professional Pilots for Civil Aviation

HAMMER-MANIPULATORS, Forging. See FORGING

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**HAMMERSMITH**

See

FLYOVERS, Hammersmith

TOWN PLANNING, Hammersmith

**HAMPSHIRE**

See

MOTOR COACHES, Operation, Hampshire

TRANSPORT, Public, Hampshire

**HAMPSTEAD**

See

HOUSING, Hampstead

LIBRARIES, Public, Hampstead

TOWN PLANNING, Hampstead

**HAMWORTHY**

See

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**HAND TOOLS**

Related Headings:

WRENCHES

**HAND TOOLS, Aluminium**

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**HAND TOOLS, Electric, Cores, Magnetic, Laminations, Stamping, Presses, Pneumatic**

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**HANDBRAKES (Motor cars) Controls, Pull measurement, Instruments**

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**HARDENING**

Related Headings:

AGEING

STRAIN AGEING

**HARDENING, Balls, Bearings.** See **BEARINGS, Balls, Hardening**

**HARDENING, Flame.** See **FLAME HARDENING**

**HARDENING, Induction, Gearbox components, Motor cars.** See **MOTOR CARS, Gearboxes, Components, Hardening, Induction**

**HARDENING, Induction, Shafts.** See **SHAFTS, Hardening, Induction**

**HARDENING, Induction, Shafts, Overdrives, Transmissions, Motor cars.** See **MOTOR CARS, Transmissions, Overdrives, Shafts, Hardening, Induction**

**HARDENING, Induction, Shafts, Transmissions, Motor vehicles.** See **MOTOR VEHICLES, Transmissions, Shafts, Hardening, Induction**

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**HARDENING, Precipitation, Stainless steel.** See **STEEL, Stainless, Hardening, Precipitation**

**HARDENING, Spark, Cutters, Machine tools.** See **MACHINE TOOLS, Cutters, Hardening, Spark**

**HARDENING, Steel.** See **STEEL, Hardening**

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**HARDFACING, Valve components.** See **VALVES, Components, Hardfacing**

#### **HARDNESS**

**Related Headings:**  
**MICROHARDNESS**  
**MICROINDENTATION**  
**SCLEROMETERS**

**HARDNESS, Cheese.** See **CHEESE, Hardness**

**HARDNESS, Hot, Nitrided molybdenum—titanium.** See **MOLYBDENUM—TITANIUM, Nitrided, Hardness, Hot**

**HARDNESS, Hot, Nitrided molybdenum—zirconium.** See **MOLYBDENUM—ZIRCONIUM, Nitrided, Hardness, Hot**

**HARDNESS, Hot, Tests, Stress rupture strength determination, Alloys.** See **ALLOYS, Stress rupture, Strength, Determination, Hot hardness tests**

**HARDNESS, Metals.** See **METALS, Hardness**

**HARDNESS, Rubber.** See **RUBBER, Hardness**

**HARDNESS, Single crystals, Salt.** See **SALT, Crystals, Single, Hardness**

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**TOWN PLANNING, Harlow**

**HARMONIC DISTORTION, Audio frequency.** See **AUDIO FREQUENCY, Distortion, Harmonic**

**HARMONIC DRIVE, Gearing, Machine tools.** See **MACHINE TOOLS, Gearing, Harmonic drive**

**HARMONIC GENERATORS.** See **FREQUENCY, Multipliers**

**HARMONIC GENERATORS, Millimetre frequency.** See **MILLIMETRE WAVE FREQUENCY, Generators, Harmonic**

**HARMONICS, Effect on breakdown voltage, Insulators.** See **INSULATORS, Breakdown voltage, Effect of harmonics**

**HARMONICS, Polyphase a.c. machines.** See **A.C., Machines, Polyphase, Harmonics**

**HARMONICS, Transformer noise.** See **TRANSFORMERS, Noise, Harmonics**

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**HOSPITALS, Harrow, Northwick Park**

**HARTLEPOOLS**

**See**

**DOCKS, Hartlepool**

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**HARVESTERS, Carrots.** See **CARROTS, Harvesters**

**HARVESTERS, Combine.** See **COMBINE HARVESTERS**

**HARVESTERS, Forage.** See **FORAGE HARVESTERS**

**HARVESTERS, Forage, Haymaking.** See **HAYMAKING, Forage harvesters**

**HARVESTERS, Potatoes.** See **POTATOES, Harvesters**

**HARVESTERS, Sugar beet.** See **SUGAR BEET, Harvesters**

**HARVESTERS, Tea.** See **TEA, Harvesters**

**HARVESTERS, Turnips.** See **TURNIPS, Harvesters**

**HARVESTING, Potatoes.** See **POTATOES, Harvesting**



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**HASTINGS COLLEGE OF FURTHER EDUCATION**

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**HATCH COVERS**, Grain, Ships. See SHIPS, Grain, Hatch covers

**HATCHERIES**, Poultry. See POULTRY, Hatcheries

**HATCHES (Ships) Covers**

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**HAWAIIAN NUTS**. See MACADAMIA NUTS

**HAWKER P.1127**, Fighter aircraft. See FIGHTER AIRCRAFT, Vertical take off, Types, Hawker P.1127

**HAWKER SIDDELEY AIRCRAFT**

Related Headings:

AVRO 748  
BLACKBURN BUCCANEER  
DE HAVILLAND COMET  
WHITWORTH GLOSTER

**HAWKER SIDDELEY ARGOSY AIRCRAFT**. See AIRCRAFT, Types, Hawker Siddeley Argosy

**HAWKER SIDDELEY DH 125 LIGHT AIRCRAFT**. See AIRCRAFT (Light) Types, Hawker Siddeley DH 125

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**HAZELWOOD**

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Hazelwood

**HEAD RESTS**, Motor cars. See MOTOR CARS, Head rests

**HEAD RETENTION**, Bottled beer. See BEER, Bottled, Head retention

**HEAD UP DISPLAY SYSTEMS**, Landing. See LANDING, Head up display systems

**HEAD-UP DISPLAY UNITS**, Instruments, Aircraft. See AIRCRAFT, Instruments, Display units, Head-up

**HEADING**, Cold. See COLD HEADING

**HEADINGS**, Mining. See MINING, Headings

**HEADLIGHTS, Motor cars**

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**HEADLIGHTS (Motor vehicles) Dipped**, Effect on road safety. See ROADS, Safety, Effect of dipped headlights

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**HEALING**, Cracks, Cleavage, Crystals, Lithium fluoride.

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**HEALTH, Industrial**. See INDUSTRIAL HEALTH

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**HEALTH, Industrial, Radioactivity**. See RADIOACTIVITY, Industrial health

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**HEAP LEACHING**, Ores, Uranium. See URANIUM, Ores, Leaching, Natural

**HEARING AIDS**

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**HEART-LUNG MACHINES, Steel-Nickel**

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**HEART RATE**, Performance rating, Work study. See WORK STUDY, Performance rating, Heart rate

**HEAT**

Related Headings:

EMISSION  
TEMPERATURE  
THERMAL  
THERMOELECTRICITY

**HEAT—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Transfer

Exchangers

Radiation

Conduction

Recovery

Storage

Pumps

Applications

Treatment

**HEAT, Bending, Bi-metallic plates.** See PLATES, Bi-metallic, Bending, Heat

**HEAT, Bending, Bi-metallic strips.** See STRIPS, Bi-metallic, Bending, Heat

**HEAT, Capacity, Fused silica.** See SILICA, Fused, Heat capacity

**HEAT, Collectors, Solar energy.** See SOLAR ENERGY, Heat Collectors

**HEAT, Conduction**

Related Headings:

THERMAL CONDUCTIVITY

**HEAT, Conduction, Equation, Numerical solution, Computers, Analogue**

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**HEAT, Conduction, Solids.** See SOLIDS, Heat, Conduction

**HEAT, Diffusivity, Metals, Slabs.** See SLABS, Metal, Heat, Diffusivity

**HEAT, Distribution, Argon shielded arc welding.** See WELDING, Arc, Argon shielded, Heat, Distribution

**HEAT, Exchangers**

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**HEAT, Exchangers (Aircraft) Dummies, Epoxy resins**

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Dummy units in aircraft production. *Tooling*, 17 (Oct 63) p.32-3. il.

Reinforced plastic "dummy" heat exchangers in aircraft construction. *Reinforced Plastics*, 8 (Oct 63) p.48-9. il.

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Organic resins in the field of heat transfer [Sakaphen] D. Paterson. *Petroleum*, 26 (Mar 63) p.114-15. il.

**HEAT, Exchangers, Cooling, Electron tubes.** See ELECTRON TUBES, Cooling, Heat exchangers

**HEAT, Exchangers, Costs**

Prices of shell-and-tube heat exchangers. A. J. Palmer, N. G. Boyd & E. A. D. Saunders. *Chemical & Process Engng.*, 44 (Nov 63) p.684-92. il. refs.

**HEAT, Exchangers, Countercurrent**

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**HEAT, Exchangers, Countercurrent, Temperature maxima**

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**HEAT, Exchangers, Design**

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**HEAT, Exchangers, Fins**

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**HEAT, Exchangers, Fixed tube plate, Stresses, Thermal**

Graphical determination of thermal stresses in fixed tube-plate heat exchangers. J. Starczewski. *Brit. Chemical Engng.*, 8 (Mar 63) p.177-9. il.

**HEAT, Exchangers, Food processing.** See FOOD, Processing, Heat exchangers

**HEAT, Exchangers, Gas turbines**

Preliminary design of gas turbine plant, pt.12: counterflow heat exchanger. W. R. Thomson. *Mechanical World*, 143 (Jan 63) p.7-8. il.

Preliminary design of gas turbine plant, pt.13: heat exchanger calculation. W. R. Thomson. *Mechanical World & Engng. Record*, 143 (Feb 63) p.53-5

**HEAT, Exchangers, Hypothermia.** See HYPOTHERMIA, Heat exchangers

**HEAT, Exchangers, Nuclear power stations**

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**HEAT, Exchangers, Titanium, Ammonium perchlorate production.** See AMMONIUM PERCHLORATE, Production, Heat exchangers, Titanium

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**HEAT, Exchangers, Tubular, Stress rupture, Testing**

Stress rupture tests on tubes at high temperatures and under internal pressures. T. A. Slocombe & W. G. Beynon. *Engng. Materials & Design*, 6 (Dec 63) p.868-9. il.

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**HEAT, Flux, Nucleate boiling, Organic chemicals mixtures.**

See ORGANIC CHEMICALS, Mixtures, Nucleate boiling, Heat flux

**HEAT, Flux, Tubes, Furnaces, Cracking, Ethane production.**

See ETHANE, Production, Cracking, Furnaces, Tubes, Heat flux

**HEAT, Liberation, Orthogonal machining. See MACHINING, Orthogonal, Heat liberation****HEAT, Liberation, Silicon diodes. See DIODES, Silicon, Heat liberation****HEAT, Loss, Boilers. See BOILERS, Heat loss****HEAT, Measurement**

Related Headings:

CALORIMETERS

CALORIMETRY

**HEAT, Pumps**

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**HEAT, Radiation**

Related Headings:

INFRA-RED RADIATION

RADIOMETERS

**HEAT, Radiation, Combustion, Cellulosic solids. See**

CELLULOSIC SOLIDS, Combustion, Heat radiation

**HEAT, Radiation, Components, Vehicles, Astronautics. See**

ASTRONAUTICS, Vehicles, Components, Heat radiation

**HEAT, Radiation, Flames. See FLAMES, Radiation****HEAT, Recovery**

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**HEAT, Recovery, Drying, Refractories. See REFRATORIES, Drying, Waste heat recovery****HEAT, Recovery, Gas turbines, Alternators. See ALTERNATORS, Gas turbines, Waste heat recovery****HEAT, Recovery, Steam plant, Steel production. See STEEL, Production, Steam plant, Waste heat recovery****HEAT, Recovery, Tankers, Ships. See TANKERS, Ships, Waste heat recovery****HEAT, Recovery, Vapours, Solvents, Ovens, Stoving, Paint. See PAINT, Stoving, Ovens, Solvents, Vapours, Waste heat recovery****HEAT, Resistance, Phenolic resins. See PHENOLIC RESINS, Heat resistance****HEAT, Sealing, Making-up, Man-made fibres, Clothing. See CLOTHING, Man-made fibres, Making-up, Sealing, Heat****HEAT, Setting, Effect on disperse dyes, Dyeing, Polyester fibres. See POLYESTER FIBRES, Dyeing, Disperse dyes, Effect of heat setting****HEAT, Setting, Woollen fabrics. See FABRICS, Woollen, Setting, Heat****HEAT, Shields, Artificial satellites. See SATELLITES, Artificial, Heat shields****HEAT, Sinks, Power transistors. See TRANSISTORS, Power, Heat sinks****HEAT, Transfer**

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**HEAT, Transfer**

Related Headings:

CONVECTION

COOLING

COOLING SYSTEMS

THERMAL CONDUCTIVITY

**HEAT, Transfer, Boiling refrigerants. See REFRIGERANTS, Boiling, Heat transfer****HEAT, Transfer, Boundary layer. See BOUNDARY LAYER, Heat transfer****HEAT, Transfer, Contact catalysts. See CATALYSTS, Contact, Heat transfer****HEAT, Transfer, Drying, Papermaking. See PAPERMAKING, Drying, Heat transfer****HEAT, Transfer, Effect of oscillations**

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**HEAT, Transfer, Spiral cans, Fuel elements, Nuclear reactors.**

See **NUCLEAR REACTORS, Fuel elements, Cans, Spiral, Heat transfer**

**HEAT, Transfer, Steel, Cylinders.** See **CYLINDERS, Steel, Heat transfer**

**HEAT, Transfer, Thermal insulating materials.** See **INSULATING MATERIALS, Thermal, Heat transfer**

**HEAT, Transfer, Transients**

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**HEAT, Transfer, Turbulent separated flow, Fluids.** See **FLUIDS, Flow, Separated, Turbulent, Heat transfer**

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**HEAT, Transfer, Windows.** See **WINDOWS, Heat transfer**

**HEAT, Treatment**

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**HEAT, Treatment**

Related Headings:

ANNEALING

AUSFORMING

HARDENING

QUENCHING

SALT BATHS, Heat treatment

STRESS RELIEVING

TEMPERING

**HEAT, Treatment, Aluminium alloys.** See **ALUMINIUM, Alloys, Heat treatment**

**HEAT, Treatment, Coatings**

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**HEAT, Treatment, Effect on cold welding.** See **WELDING, Cold, Effect of heat treatment**

**HEAT, Treatment, Effect on filterability, Residual fuel oil.** See **FUEL OIL, Residual, Filterability, Effect of heat treatment**

**HEAT, Treatment, Effect on soda-lime-silica glass strength.** See **GLASS, Soda-Lime-Silica, Strength, Effect of heat treatment**

**HEAT, Treatment, Engines, Liquid fuelled rockets.** See **ROCKETS, Liquid fuelled, Engines, Heat treatment**

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**HEAT, Treatment, Motor car parts.** See **MOTOR CARS, Parts, Heat treatment**

**HEAT, Treatment, Motor cycle parts.** See **MOTOR CYCLES, Parts, Heat treatment**

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**HEAT, Treatment, Post weld, Spot welding.** See **WELDING, Spot, Post weld heat treatment**

**HEAT, Treatment, Pressure vessels.** See **PRESSURE VESSELS, Heat treatment**

**HEAT, Treatment, Scale removal, Coatings**

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**HEAT, Treatment, Steel, Rolls.** See **ROLLS, Steel, Heat treatment**

**HEAT, Treatment, Steel, Strips.** See **STRIPS, Steel, Heat treatment**

**HEAT, Treatment, Steel, Tools.** See **TOOLS, Steel, Heat treatment**

**HEAT, Treatment, Welded austenitic stainless steel.** See **STEEL, Stainless, Austenitic, Welded, Heat treatment**

**HEAT, Treatment, Welded spherical vessels.** See **VESSELS, Spherical, Welded, Heat treatment**

**HEAT, Treatment, Welded steel.** See **STEEL, Welded, Heat treatment**

**HEAT AGEING, Epoxy resins.** See **EPOXY RESINS, Heat ageing**

**HEAT CAMERAS, Infra-red radiation, Measurement, Temperature, Skin.** See **SKIN, Temperature, Measurement, Infra-red radiation, Heat cameras**

**HEAT CAPACITY, Iron.** See **IRON, Heat capacity**

**HEAT OF EVAPORATION.** See **EVAPORATION, Heat of**

**HEAT OF IMMERSION, Methanol, Coal.** See **COAL, Immersion (Methanol) Heat**

**HEAT OF IMMERSION, Methanol, Coke.** See **COKE, Immersion (Methanol) Heat**

**HEAT OF REACTION, Strength determination, Chemical bonds.** See **CHEMICAL BONDS, Strength, Determination, Heats of reaction**

**HEAT RECOVERY EVAPORATORS, Distillation, Water.** See **WATER, Distillation, Evaporators (Heat recovery)**

**HEAT RESISTANT CONCRETE.** See **CONCRETE, Heat-resistant**

**HEAT TREATED CASTINGS, Chromium-Steel.** See **STEEL-CHROMIUM, Castings, Heat treated**

**HEAT TREATED MANGANESE DIOXIDE.** See **MANGANESE DIOXIDE, Heat treated**

**HEAT TREATED NICKEL-MANGANESE-CHROMIUM-STEEL.** See **STEEL-CHROMIUM-MANGANESE-NICKEL, Heat treated**

**HEAT TREATED NODULAR IRON.** See **IRON, Nodular, Heat treated**

**HEATED RECTANGULAR PLATES.** See **PLATES, Rectangular, Heated**

**HEATED STEEL.** See **STEEL, Heated**

**HEATERS, Commercial vehicles.** See **VEHICLES, Commercial, Heaters**

HEATERS, Feedwater, Boilers, Power stations. See POWER STATIONS, Boilers, Feedwater, Heaters

#### HEATERS, Motor cars

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#### HEATERS (Motor cars) Manufactures

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HEATERS, Water. See WATER, Heaters

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#### HEATING

Related Headings:

CALCINING  
CRUCIBLES  
ELECTRON BEAM HEATING  
FURNACES  
KILNS  
OVENS  
PLASMA ARCS  
REHEATING  
ROASTING  
STOVES  
STOVING

#### HEATING—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Education

Equipment

Control systems

By fuel

Gas fired

Oil fired

Kerosine fired

Electric

Induction

R.F.

HEATING, A.C. motors. See ELECTRIC MOTORS, A.C., Heating

HEATING, Aerodynamic, Hypersonic aircraft. See AIRCRAFT, Hypersonic, Aerodynamic heating

HEATING, Air. See AIR HEATING

HEATING, Aluminium manufacture. See ALUMINIUM, Manufactures, Heating

HEATING, Asphalt, Floors. See FLOORS, Asphalt, Heating

HEATING, Bowling centres. See BOWLING CENTRES, Heating

HEATING, Buildings. See BUILDINGS, Heating

HEATING, Ceilings, Hydraulic engineering laboratories. See HYDRAULIC ENGINEERING, Laboratories, Ceilings, Heating

HEATING, Central, Terminal buildings, Airports. See AIR-PORTS, Terminal buildings, Heating, Central

HEATING, Ceramics manufactures. See CERAMICS, Manufactures, Heating

HEATING, Coal. See COAL, Heating

HEATING, Commercial buildings. See COMMERCIAL BUILDINGS, Heating

#### HEATING, Control systems, Manufactures

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HEATING, Deterioration, Enamelled wires. See WIRES, Enamelled, Deterioration, Heating

HEATING, Dielectric, Freeze drying, Food. See FOOD, Freeze drying, Dielectric heating

HEATING, Diesel trains. See TRAINS, Diesel, Heating

HEATING, District. See DISTRICT HEATING

HEATING, District, University buildings. See UNIVERSITY BUILDINGS, District heating

#### HEATING, Education

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#### HEATING, Electric

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HEATING, Electric, Anti-freeze equipment, Gas-holders. See GAS-HOLDERS, Anti-freeze equipment, Electrical

#### HEATING, Electric, Elements, Manufactures

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#### HEATING, Electric, Elements, Printed

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HEATING, Electric, Floors, Cattle housings. See CATTLE, Housings, Floors, Heating, Electric

HEATING, Electric, Housing. See HOUSING, Heating, Electric

HEATING, Electric, Housing, Effect on peak loading, Electric power systems. See ELECTRIC POWER SYSTEMS, Peak loading, Effect of domestic space heating

HEATING, Electric, Passenger rolling stock, Railways. See ROLLING STOCK (Passenger, Railways) Heating, Electric

HEATING, Electric, Pasteurisation, Milk. See MILK, Pasteurisation, Heating, Electric

#### HEATING, Electric, Surface

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HEATING, Embassies. See EMBASSIES, Heating

#### HEATING, Equipment, Industrial design

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HEATING, Exchanges, Automatic telephony. See TELEPHONY, Automatic, Exchanges, Heating

HEATING, Extrusion, Thermoplastics. See THERMOPLASTICS, Extrusion, Heating

HEATING, Factories. See FACTORIES, Heating

HEATING, Factories, Machine tool manufacture. See MACHINE TOOLS, Manufactures, Factories, Heating

HEATING, Flats. See FLATS, Heating

HEATING, Floors. See FLOORS, Heating

#### HEATING, Gas-fired

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- HEATING, Gas-fired, Abrasives manufactures, Shot-blasting. See SHOT-BLASTING, Abrasives, Manufactures, Heating, Gas
- HEATING, Gas-fired, Baking, Cake. See CAKE, Baking, Heating, Gas-fired
- HEATING, Gas-fired, Buildings. See BUILDINGS, Heating, Gas
- HEATING, Gas-fired, Can manufactures, Food. See FOOD, Cans, Manufactures, Heating, Gas-fired
- HEATING, Gas fired, Factories. See FACTORIES, Heating, Gas-fired
- HEATING, Gas-fired, Foundries, Investment casting. See CASTING, Investment, Foundries, Heating, Gas-fired
- HEATING, Gas-fired, Foundry practice. See FOUNDRY PRACTICE, Heating, Gas-fired
- HEATING, Gas-fired, Glass manufactures, Bottles. See BOTTLES, Glass, Manufactures, Heating, Gas-fired
- HEATING, Gas-fired, Glass manufactures, Lamps, Motor cars. See MOTOR CARS, Lamps, Glass, Manufactures, Heating, Gas-fired
- HEATING, Gas-fired, Glass manufactures, Tubes, Receivers, Television. See TELEVISION, Receivers, Tubes, Glass, Manufactures, Heating, Gas-fired
- HEATING, Gas-fired, Houses. See HOUSES, Heating, Gas
- HEATING, Gas-fired, Lubricating grease manufactures. See LUBRICATING GREASES, Manufactures, Heating, Gas
- HEATING, Gas-fired, Mirror manufacture. See MIRRORS, Manufactures, Heating, Gas-fired
- HEATING, Gas-fired, Nylon yarn manufactures. See YARNS, Nylon, Manufactures, Heating, Gas-fired
- HEATING, Gas-fired, Radiant panel**  
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- HEATING, Gas-fired, Silverware manufactures. See SILVERWARE, Manufactures, Heating, Gas fired
- HEATING, Gas fired, Smoking, Bacon. See BACON, Smoking, Heating
- HEATING, Gas-fired, Steel production plant manufactures. See STEEL, Production, Plant; Manufactures, Heating, Gas-fired
- HEATING, Gas removal, Charcoal. See CHARCOAL, Gas removal, Heating
- HEATING, Glass bottle manufacture. See BOTTLES, Glass, Manufactures, Heating
- HEATING, Glass manufactures. See GLASS, Manufactures, Heating
- HEATING, Glass reflector manufacture, Roads. See ROADS, Reflectors, Glass, Manufactures, Heating
- HEATING, Greenhouses. See GREENHOUSES, Heating
- HEATING, Hatcheries, Poultry. See POULTRY, Hatcheries, Heating
- HEATING, Hospitals. See HOSPITALS, Heating
- HEATING, Hot dip galvanising, Steel. See STEEL, Galvanising, Hot dip, Heating
- HEATING, Hot water, Cooling systems, Engines, Motor boats. See BOATS, Motor, Engines, Cooling systems, Heating, Hot water
- HEATING, Hotels. See HOTELS, Heating
- HEATING, Houses. See HOUSES, Heating
- HEATING, Housing. See HOUSING, Heating
- HEATING, Hydrogen, Propellants; Transfer paths, Orbits, Communication satellites. See SATELLITES, Artificial, Communication, Orbits, Transfer paths, Propellants, Hydrogen, Heating
- HEATING, Induction, Extruders, Thermoplastics, Film. See FILM, Thermoplastics, Extruders, Induction heated
- HEATING, Induction, Inductors, Inserts, P.T.F.E.**  
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- HEATING, Injection moulding, Thermoplastics. See THERMOPLASTICS, Moulding, Injection, Heating
- HEATING, Kerosine-fired, Equipment, Safety**  
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- HEATING, Lime, Reaction with alumina. See ALUMINA, Reaction with lime, Heating
- HEATING, Low voltage, Curing, Adhesives, Wood, Bonding, Plastics, Sheets. See SHEETS, Plastics, Bonding (Wood) Adhesives, Curing, Low voltage heating
- HEATING, Low voltage, Curing, Adhesives, Wood, Laminates. See LAMINATES, Wood, Adhesives, Curing, Low voltage heating
- HEATING, Low voltage, Curing, Adhesives, Wood manufactures. See WOOD, Manufactures, Adhesives, Curing, Heating, Low voltage
- HEATING, Metals. See METALS, Heating
- HEATING, Motor car manufactures. See MOTOR CARS, Manufactures, Heating
- HEATING, Office buildings. See OFFICE BUILDINGS, Heating
- HEATING, Oil-fired**  
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- HEATING, Oil-fired, Buildings. See BUILDINGS, Heating, Oil-fired
- HEATING, Oil-fired, Control systems**  
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- HEATING, Oil-fired, Electric motors, Starters**  
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- HEATING, Oil-fired, Factories, Wires manufactures. See WIRES, Manufactures, Factories, Heating, Oil fired
- HEATING, Oil-fired, Fuel pumps, Control systems**  
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- HEATING, Oil-fired, Houses. See HOUSES, Heating, Oil-fired
- HEATING, Oil-fired, Housing. See HOUSING, Heating, Oil-fired
- HEATING, Oil-fired, Industrial buildings. See INDUSTRIAL BUILDINGS, Heating, Oil-fired
- HEATING, P.V.C. production. See P.V.C., Production, Heating
- HEATING, Plasma diodes. See DIODES, Plasma, Heating
- HEATING, Printing works. See PRINTING, Works, Heating
- HEATING, Public libraries. See LIBRARIES, Public, Heating
- HEATING, R.F.**  
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- HEATING, R.F., Curing, Adhesives, Wood manufactures. See WOOD, Manufactures, Adhesives, Curing, Heating, R.F.
- HEATING, R.F., Drying, Wood. See WOOD, Drying, Heating, R.F.
- HEATING, R.F., Lipping, Particle boards. See PARTICLE BOARDS, Lipping, Heating, R.F.



HEATING, R.F., Lipping, Wood, Flush doors. See DOORS, Flush, Wood, Lipping, Heating, R.F.

HEATING, R.F., Wood, Cabinet manufactures, Receivers, Radio. See RADIO, Receivers, Cabinets, Manufactures, Wood, Heating, R.F.

HEATING, R.F., Wood, Cabinet manufactures, Receivers, Television. See TELEVISION, Receivers, Cabinets, Manufactures, Wood, Heating, R.F.

HEATING, R.F., Wood manufactures. See WOOD, Manufactures, Heating, R.F.

HEATING, Radiant, Buildings. See BUILDINGS, Heating, Radiant

HEATING, Radiant, Industrial buildings. See INDUSTRIAL BUILDINGS, Heating, Radiant

HEATING, Refining, Petroleum. See PETROLEUM, Refining, Heating

HEATING, Roads. See ROADS, Heating

HEATING, Rolling stock, Passenger, Railways. See ROLLING STOCK (Passenger, Railways) Heating

HEATING, Schools. See SCHOOLS, Heating

HEATING, Secondary schools. See SCHOOLS, Secondary, Heating

HEATING, Slow wave structures, Microwave tubes. See ELECTRON TUBES (Microwave) Slow wave structures, Heating

HEATING, Space charge limited current, Semiconductors. See SEMICONDUCTORS, Current, Space charge limited, Heating

HEATING, Sports buildings. See SPORTS BUILDINGS, Heating

HEATING, Steam, Petroleum, Tankers. See TANKERS, Ships, Petroleum, Heating, Steam

HEATING, Swimming baths. See SWIMMING BATHS, Heating

HEATING, Switches, Railway tracks. See RAILWAYS, Track, Switches, Heating

HEATING, Tall buildings. See BUILDINGS, Tall, Heating

HEATING, Textile manufactures. See TEXTILES, Manufactures, Heating

HEATING, Tobacco processing. See TOBACCO, Processing, Heating

HEATING, Tyres, Supersonic aircraft. See AIRCRAFT, Supersonic, Tyres, Heating

HEATING, Underfloor, Buildings. See BUILDINGS, Heating, Underfloor

HEATING, Viscous, Cone and plate viscometers. See VISCOMETERS, Cone and plate, Viscous heating

HEATING, Warehouses. See WAREHOUSES, Heating

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HEATING, Water, Houses. See HOUSES, Water, Heating

HEATING, Water, Housing. See HOUSING, Water, Heating

HEATING, Water, Swimming baths. See SWIMMING BATHS, Water, Heating

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**HOT WORKING**

Related Headings:  
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**HOTELS**

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**HOUNSLOW**

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**COOKERS**

**COOKING UTENSILS**

**DRAINING BOARDS**

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**TRAYS**

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**HOUSES**

- Related Headings:  
VILLAS, Roman

**HOUSES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

- Research
- Costs
  - Quantity surveying*
- Problems
  - Construction defects*
  - Pests*
- Technical activities
  - Design*
  - Conversions*
  - Restoration*
  - Modernisation*
  - Painting*
  - Paint*
- Parts and services
  - Frames*
  - Panels*
  - Walls*
  - Floors*
  - Staircases*
  - Heating*
  - Insulation*

**HOUSES—SUBHEADINGS—Synopsis—cont.**

- Lighting*
- Water*
- Drainage*

**Building materials**

- Kinds of houses
  - By material
    - Wood*
    - Concrete*
    - Steel*
    - Aluminium*
  - By method of construction
    - Prefabricated*
    - Carcass*
    - Demountable*
    - Expandable*
  - By form
    - Terraced*
    - Patio*
    - Solar*

**HOUSES, Aluminium**

- Aluminium for houses. *Aluminium Courier*, (Dec 62) p.4-15. il.

**HOUSES, Aluminium, Paint, Testing**

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**HOUSES, Aluminium, Prefabricated**

- Prefabricated houses. *Aluminium Courier* (Mar 63) p.22-3. il.

**HOUSES, Animal, Medical laboratories. See MEDICAL LABORATORIES, Animal houses****HOUSES, Building materials, Fibre board**

- Chipboard for house interior. *Wood*, 28 (Aug 63) p.324-5. il.

**HOUSES, Building materials, Plastics**

- Plastics for housing: full-scale experiment. *Architects' J.*, 138 (28 Aug 63) p.427-34. il.
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**HOUSES, Building materials, Plastics, Research**

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**HOUSES, Construction defects**

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**HOUSES, Conversions, Fibre board**

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**HOUSES, Costs**

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**HOUSING**

- Related Headings:  
 BUNGALOWS  
 CARAVANS, Housing  
 FLATS  
 HOUSES

**HOUSING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## Particular localities

- Great Britain*  
*England*  
*London*  
*Camberwell*  
*Kensington*  
*Chelsea*  
*Hampstead*  
*Lewisham*  
*Blackheath*  
*Canterbury*  
*Woking*  
*Lee-on-Solent*  
*Devonport*  
*Taunton*  
*St. Albans*

**HOUSING—SUBHEADINGS—Synopsis—cont.**

- Birmingham*  
*Leicester*  
*Sheffield*  
*Scotland*  
*Edinburgh*  
*Glasgow*  
*Germany*  
*Quickborn*  
*Switzerland*  
*Zug*  
*Norway*  
*Israel*  
*Canada*  
*U.S.A.*  
*Mexico*  
*South America*  
*Colombia*  
*Research*  
*Problems*  
*Town Planning*  
*Density*  
*High Density*  
*Technical activities*  
*Prefabrication*  
*Parts & Services*  
*Components*  
*Frames*  
*Roofs*  
*Insulation*  
*Plumbing*  
*Heating*  
*Lighting*  
*Electrical installations*  
*Water*  
*Storage facilities*  
*Types of housing*  
*By Material*  
*Concrete*  
*Wood*  
*By particular group of occupants*  
*Disabled persons*  
*Old people*  
*Industrial workers*  
*Gold mining*

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 HOUSINGS, Differentials, Transmissions, Motor cars. See MOTOR CARS, Transmissions, Differentials, Housings  
 HOUSINGS, Fattening, Cattle. See CATTLE, Fattening, Housings  
 HOUSINGS, Fattening pigs. See PIGS, Fattening, Housings  
 HOUSINGS, Instruments. See INSTRUMENTS, Housings  
 HOUSINGS, Mills, Hot rolling, Steel. See STEEL, Rolling, Hot, Mills, Housings  
 HOUSINGS, Rear axles, Commercial vehicles. See VEHICLES, Commercial, Rear axles, Housings  
 HOUSINGS, Rear axles, Motor vehicles. See MOTOR VEHICLES, Rear axles, Housings  
 HOUSINGS, Suckling cows. See COWS, Suckling, Housing  
 HOUSINGS, Transmissions, Motor cars. See MOTOR CARS, Transmissions, Housings  
 HOUSTON  
 See

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Particular countries  
*Great Britain*

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Problems  
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*Navigation aids*  
*Navigation systems*

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*Terminal buildings*

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DOCKS, Hull

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- Related Headings:

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**HYDROGEN**

Related Headings:

DEUTERIUM

TRITIUM

HYDROGEN, Absorption, Arc melting. See MELTING, Arc, Hydrogen absorption

HYDROGEN, Absorption, Arc welding, Steel. See STEEL, Welding, Arc, Hydrogen absorption

HYDROGEN, Absorption, Electrolysis, High tensile steel cathodes. See CATHODES, Steel, High tensile, Electrolysis, Hydrogen absorption

HYDROGEN, Bubble chambers. See BUBBLE CHAMBERS, Hydrogen

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- HYDROGEN, Diffusion, Effect on conductivity, Rutile.** See RUTILE, Conductivity, Effect of hydrogen diffusion
- HYDROGEN, Effect on mechanical properties, Forgings, Molybdenum-Nickel-Chromium-Steel.** See STEEL-CHROMIUM-MOLYBDENUM-NICKEL, Forgings, Mechanical properties, Effect of hydrogen
- HYDROGEN, Embrittlement, Steel.** See STEEL, Embrittlement, Hydrogen
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- HYDROGEN, Evolution, Potassium hydroxide electrolytes, Tin cathodes.** See CATHODES, Tin, Potassium hydroxide electrolytes
- HYDROGEN, Forgings, Chromium-Nickel-Molybdenum-Steel.** See STEEL-CHROMIUM-NICKEL-MOLYBDENUM, Forgings, Hydrogen content
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- HYDROGEN, Removal, Liquid steel.** See STEEL, Liquid, Removal of hydrogen
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- HYDROGEN BROMIDE-ETHYLENE, Chemical reactions, Ethyl bromide production.** See ETHYL BROMIDE, Production, Ethylene-Hydrogen bromide reaction
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- HYDROGEN-DEUTERIUM, Targets, Proton synchrotrons.** See SYNCHROTRONS, Protons, Targets, Hydrogen-Deuterium
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- HYDROGEN PEROXIDE, Gas concrete.** See CONCRETE, Gas, Hydrogen peroxide
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- HYDROGENATED HAFNIUM DIOXIDE.** See HAFNIUM DIOXIDE, Hydrogenated
- HYDROGENATED TITANIUM DIOXIDE.** See TITANIUM DIOXIDE, Hydrogenated
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- HYDROGENATION, Humic acids, Brown coal.** See COAL, Brown, Humic acids, Hydrogenation
- HYDROGENATION, Sediments, Petroleum genesis.** See PETROLEUM, Genesis, Sediments, Hydrogenation

HYDROGENATION, Unsaturation determination, Olefins. See OLEFINS, Unsaturation, Determination, Hydrogenation  
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#### HYGROMETERS

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CHURCHES, Hyvinkää

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INERTIAL NAVIGATION SYSTEMS. See NAVIGATION SYSTEMS, Inertial

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**INTERIOR DECORATION**

Related Headings:

LINOLEUM, Decorative materials

TAPESTRIES, Interior decoration

**INTERIOR DECORATION, Banks. See BANKS, Interior decoration****INTERIOR DECORATION, Board rooms. See BOARD ROOMS, Interior decoration****INTERIOR DECORATION, Bookshops. See BOOKSHOPS, Interior decoration****INTERIOR DECORATION, Butchers' shops. See BUTCHERS, Shops, Interior decoration****INTERIOR DECORATION, Club houses. See CLUB HOUSES, Interior decoration****INTERIOR DECORATION, Colour**

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**INTERIOR DECORATION, Embassies. See EMBASSIES, Interior decoration****INTERIOR DECORATION, Industrial buildings. See INDUSTRIAL BUILDINGS, Interior decoration****INTERIOR DECORATION, Launderettes. See LAUNDERETTES, Interior decoration****INTERIOR DECORATION, Libraries. See LIBRARIES, Interior decoration****INTERIOR DECORATION, Libraries, Colleges. See COLLEGES, Libraries, Interior decoration****INTERIOR DECORATION, Materials, Manufactures**

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**INTERIOR DECORATION, Museums. See MUSEUMS, Interior decoration****INTERIOR DECORATION, Offices. See OFFICES, Interior decoration****INTERIOR DECORATION, Post offices. See POST OFFICES, Interior decoration****INTERIOR DECORATION, Reception halls, Breweries. See BREWERIES, Reception halls, Interior decoration****INTERIOR DECORATION, Reception halls, Hotels. See HOTELS, Reception halls, Interior decoration****INTERIOR DECORATION, Reception halls, Office buildings. See OFFICE BUILDINGS, Reception halls, Interior decoration****INTERIOR DECORATION, Restaurants, Factories. See FACTORIES (Restaurants) Interior decoration****INTERIOR DECORATION, Retail shops. See SHOPS, Retail, Interiors, Decoration****INTERIOR DECORATION, Staff rooms, Office buildings. See OFFICE BUILDINGS, Staff rooms, Interior decoration****INTERIOR DECORATION, Studios, Recording, Sound films. See SOUND FILMS, Recording, Studios, Interior decoration****INTERIOR DECORATION, Study-bedrooms. See STUDY-BEDROOMS, Interior decoration****INTERIOR DESIGN, Aircraft. See AIRCRAFT, Interior design****INTERIOR DESIGN, Art galleries. See ART GALLERIES, Interior design****INTERIOR DESIGN, Bathrooms. See BATHROOMS, Design****INTERIOR DESIGN, Bedrooms, Hotels. See HOTELS, Bedrooms, Interior design****INTERIOR DESIGN, Buses. See BUSES, Interior design****INTERIOR DESIGN, Cloakrooms. See CLOAKROOMS, Design****INTERIOR DESIGN, Factories. See FACTORIES, Interior design****INTERIOR DESIGN, Film studios. See FILM STUDIOS, Interiors****INTERIOR DESIGN, Hairdressing salons. See HAIRDRESSING SALONS, Interior design****INTERIOR DESIGN, Hotels. See HOTELS, Interiors****INTERIOR DESIGN, Kitchens, University buildings. See UNIVERSITY BUILDINGS, Kitchen, Design****INTERIOR DESIGN, Motor coaches. See MOTOR COACHES, Interior design****INTERIOR DESIGN, Office buildings. See OFFICE BUILDINGS, Interiors****INTERIOR DESIGN, Restaurants. See RESTAURANTS, Interiors****INTERIOR DESIGN, Retail shops. See SHOPS, Retail, Interiors****INTERIOR DESIGN, Sound recording studios. See SOUND, Recording, Studios, Interiors****INTERIOR DESIGN, Terminal buildings, Air transport. See AIR TRANSPORT, Terminal buildings, Interiors****INTERMEDIATE FREQUENCY. See I.F.****INTERMEDIATE RESEARCH REACTORS. See NUCLEAR REACTORS (Research) Intermediate****INTERMETALLIC COMPOUNDS, Aluminium alloys. See ALUMINIUM, Alloys, Intermetallic compounds****INTERMETALLIC COMPOUNDS, Grain boundaries, Embrittlement**

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**INTERNAL FRICTION**, Martensitic steel. See **STEEL**, Martensitic, Internal friction

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**INTERNATIONAL LAW**, Fishing. See **FISHING**, International law

**INTERNATIONAL NICKEL COMPANY (MOND) LTD.**

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Related Headings:

**PATENTS**

**INVERNESS**

See

**RAILWAYS**, Inverness—Perth

**INVERSION**, Matrices. See **MATRICES**, Inversion

**INVERTED TETRODE VOLTMETERS**. See **VOLTMETERS**, Inverted tetrode

**INVERTERS**

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INVERTERS, Transistor, Fluorescent lamps, Public service vehicles. See VEHICLES, Public service, Lamps, Fluorescent, Inverters, Transistor

INVERTS, Tunnels, Railways. See RAILWAYS, Tunnels, Inverts

INVESTMENT CASTING. See CASTING, Investment

INVESTMENT CASTING. See CASTING, Lost wax

INVESTMENT CASTING, Blades, Gas turbines, Aircraft. See AIRCRAFT, Gas turbines, Blades, Casting, Investment

INVESTMENT CASTING, Gas turbine components, Aircraft. See AIRCRAFT, Gas turbines, Components, Casting, Investment

INVESTMENT CASTING, Motor vehicle parts. See MOTOR VEHICLES, Parts, Casting, Investment

INVESTMENT CASTING, Nickel alloys. See NICKEL, Alloys, Casting, Investment

INVESTMENT CASTING, Steel. See STEEL, Casting, Investment

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Related Headings:

**IODOPHORS**

IODINE, Aqueous fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Aqueous, Iodine

IODINE, Cod liver oil. See COD LIVER OIL, Iodine value

IODINE, Fission products, Wastes, Nuclear reactors. See NUCLEAR REACTORS, Wastes, Fission products, Iodine

**IODINE, Gas discharge, Suppression, Iodine-131**

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IODINE-131, Gas discharge suppression, Iodine. See IODINE, Gas discharge, Suppression, Iodine-131

IODINE-131, Milk. See MILK, Constituents, Iodine-131

IODINE QUARTZ LAMPS. See LAMPS, Quartz iodine

IODINE QUARTZ LAMPS, Churches. See CHURCHES, Lamps, Quartz iodine

IODINE QUARTZ LAMPS, Floodlighting, Sports grounds. See SPORTS GROUNDS, Floodlighting, Lamps, Quartz iodine

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ION BOMBARDMENT, Etching, Plutonium dioxide, Fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Plutonium dioxide, Etching, Ion bombardment

ION DIFFUSION, Cadmium acetate solutions, Single crystals, Cadmium electrodes. See ELECTRODES, Cadmium, Crystals, Single, Cadmium acetate solutions, Ion diffusion

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**ION EXCHANGE**

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ZIRCONIUM PHOSPHATE, Ion exchange properties

ION EXCHANGE, Ceramics, Clays. See CERAMICS, Clays, Ion exchange

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ION EXCHANGE, Coagulation, Colloids. See COLLOIDS, Coagulation, Ion exchange

**ION EXCHANGE, Columns, Sieve plates**

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ION EXCHANGE, Decolorisation, Syrup, Sugar. See SUGAR, Syrup, Decolorisation, Ion exchange

ION EXCHANGE, Effluent treatment, Electroplating. See ELECTROPLATING, Effluents, Treatment, Ion exchange

ION EXCHANGE, Feedwater, Boilers, Papermaking. See PAPERMAKING, Boilers, Feedwater, Ion exchange

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ION EXCHANGE, Liquids, Determination of chrome sesquioxide, Chromite. See CHROMITE, Determination of chrome sesquioxide, Ion exchange liquids

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ION EXCHANGE, Purification, Water. See WATER, Purification, Ion exchange

ION EXCHANGE, Purification, Water, Laboratories. See LABORATORIES, Water, Purification, Ion exchange

ION EXCHANGE, Purification, Water supplies, Hospitals. See HOSPITALS, Water supplies, Purification, Ion exchange

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Related Headings:

ALLYLAMMONIUM SALTS, Polymers, Ion exchange resins

ION EXCHANGE, Sorption, Insulin. See INSULIN, Sorption, Ion exchange

ION EXCHANGE, Sugars determination, Molasses. See MOLASSES, Determination of sugars, Ion exchange

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**ION PERMEABILITY**, Ferric oxide, Priming, Iron paint. See **IRON**, Paint, Priming, Ferric oxide, Ion permeability

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**IONISATION**, Gases. See **GASES**, Ionisation

**IONISATION**, Generators, Magnetohydrodynamics. See **MAGNETOHYDRODYNAMICS**, Generators, Ionisation

**IONISATION**, Potentials, Inert gases. See **GASES**, Inert, Ionisation potentials

**IONISATION**, Solid particles. See **PARTICLES**, Ionisation

**IONISATION**, Testing, Electrical insulation. See **INSULATION**, Electrical, Testing, Ionisation

**IONISATION**, Thermal, Mass spectrometry. See **MASS SPECTROMETRY**, Thermal ionisation

**IONISATION CROSS SECTIONS**, Inert gases. See **GASES**, Inert, Ionisation cross sections

**IONISATION DETECTORS**, Argon, Gas chromatography. See **GAS CHROMATOGRAPHY**, Ionisation detectors, Argon

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**IONOSPHERE**, Absorption loss, H.F. radio transmission.

See **RADIO**, H.F., Transmission, Absorption loss, Ionosphere

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**IONOSPHERE**, Reflection, H.F. radio waves. See **RADIO**, H.F., Waves, Reflection, Ionosphere

**IONOSPHERE**, Reflection, Radio waves. See **RADIO**, Waves, Reflection, Ionosphere

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**IONOSPHERE**, Scatter, Radio waves. See **RADIO**, Waves, Scatter, Ionosphere

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**IONS**, Aluminium. See **ALUMINIUM**, Ions

**IONS**, Negative, Accelerators. See **ACCELERATORS**, Van de Graaff, Tandem

**IONS**, Negative, Mass spectrometry, Determination, Residual gases, Vacuum. See **VACUUM**, Residual gases, Determination, Mass spectrometry, Negative ions

**IONS**, Positive, Guns

Positive ion beams. M. R. Gavin, K. Chandra & L. J. Lloyd. *J. of Electronics & Control*, 14 (Feb 63) p.121-8. il. refs.

**IONS**, Positive, Klystron amplifiers. See **AMPLIFIERS**, Klystron, Positive ion

**IONS**, Positive, Molybdenum collector electron emission, Gas discharge. See **GAS DISCHARGE**, Electron emission (Molybdenum collectors) Positive ions

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**IPSWICH**

See

**ROADS**, Town planning, Ipswich  
**SHOPPING CENTRES**, Ipswich

**IRAN**

See

**CHROMITE**, Mining, Iran  
**DAMS**, Khuzestan  
**FOOD**, Processing, Iran  
**IRON**, Ores, Iran  
**PETROLEUM**, Iran  
**RAILWAYS**, Iran



## IRAQ

See

DAMS, Derbendi Khan  
DRAINAGE, Baghdad  
PETROLEUM, Iraq

## IRELAND

See

AIRCRAFT, Military, Ireland  
BUILDING, Stone, Quarrying, Ireland  
CEMENT, Production, Ireland  
DAIRIES, Ireland  
ELECTRIC POWER SYSTEMS, Ireland  
GAS (Town) Production, Ireland  
PAPERMAKING, Ireland  
PETROLEUM, Drilling, Ireland  
PETROLEUM, Production, Doonbeg  
PORTS, Dublin  
PROSPECTING, Ireland  
RAILWAYS, Ireland  
RAILWAYS, Sligo  
SHIPBUILDING, Cork  
TECHNICAL EDUCATION, Ireland  
TRAMWAYS, Hill of Howth  
TRANSPORT, Public, Ireland

IRELAND, Northern. See NORTHERN IRELAND

IRIDIUM, Effect on solarisation, Photography development.

See PHOTOGRAPHY, Development, Solarisation, Effect  
of iridium

## IRLAM

See

COUNCIL OFFICES, Irlam

## IRON

Related Headings:  
STEEL

## IRON-SUBHEADINGS-Synopsis

*This synopsis shows, in italic, related subheadings which  
are separated in the alphabetical sequence following.*

Information services

Problems

Corrosion

Scaling

Properties

Torsion

Yield stress

Flow stress

Heat capacity

Irradiation

Chemistry

Hydrolysis

Technical activities

Ores

Mining

Sand

Analysis

Determination

Production

Refining

Granulation

Manufactures

Casting

Foundry practice

Foundries

Powder metallurgy

Blackening

Polishing

Coating

Paint

Packaging

## IRON-SUBHEADINGS-Synopsis-cont.

Types of Iron

Liquid

Pig

Cast

Grey

White

Mottled

Nodular

Malleable

Wrought

Quench aged

Alloys

Products

Castings

Scrap

## IRON, Alloys, Ageing, Quench, Microscopy, Electron

Structure of quench-aged iron-carbon and iron-nitrogen  
alloys (extracts) K. F. Hale & D. McLean. *Iron &  
Steel*, 36 (22 May 63) p.272-7. il.

## IRON, Alloys, Ageing, Strain, Microscopy, Electron

Electron transmission study of the strain ageing of iron  
(extracts) W. C. Leslie & A. S. Keh. *Iron & Steel*, 36  
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## IRON, Alloys, Thermal transformations

Liquid solid and  $\delta$ - $\gamma$  equilibria in iron rich alloys. R. A.  
Buckley & W. Hume-Rothery. *J. of Iron & Steel Inst.*, 201  
(Mar 63) p.227-32

Liquidus-solidus relation in iron rich alloys of the  
systems Fe-Tc, Fe-Os, Fe-Ir, and Fe-Au. R. A.  
Buckley & W. Hume-Rothery. *J. of Iron & Steel Inst.*, 201  
(Feb 63) p.121-4. il. refs.

IRON, Anodes. See ANODES, Iron

IRON, Armco, Electrodes. See ELECTRODES, Iron, Armco

## IRON, Blackening

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**IRRADIATION**

Related Headings:

RADIOACTIVITY

IRRADIATION, Concentration, Ores, Copper. See COPPER, Ores, Concentration, Irradiation

IRRADIATION, Crystals. See CRYSTALS, Irradiation

IRRADIATION, Defect production, Crystals. See CRYSTALS, Defects, Production, Irradiation

IRRADIATION, Effect on ceramics, Nuclear reactors. See NUCLEAR REACTORS, Ceramics, Effect of irradiation

IRRADIATION, Effect on graphite, Moderators, Gas cooled reactors. See NUCLEAR REACTORS, Gas cooled, Moderators, Graphite, Effect of Irradiation

IRRADIATION, Effect on molecular weight, Polymers. See POLYMERS, Molecular weight, Effect of irradiation

IRRADIATION, Effect on plutonium dioxide, Fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Plutonium dioxide, Effect of irradiation

IRRADIATION, Effect on resistivity, Uranium monocarbide, Fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Uranium monocarbide, Resistivity, Effect of irradiation

IRRADIATION, Effect on uranium dioxide, Fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Uranium dioxide, Effect of irradiation

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IRRADIATION, Fragmentation, Oxide fuels, Nuclear reactors. See NUCLEAR REACTORS, Fuels, Oxides, Fragmentation, Irradiation

IRRADIATION, Gas removal, Cellulose, Cotton. See COTTON, Cellulose, Gas removal, Irradiation

IRRADIATION, Germanium semiconductors. See SEMI-CONDUCTORS, Germanium, Irradiation

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IRRADIATION, Organic compounds production. See ORGANIC COMPOUNDS, Production, Irradiation

IRRADIATION, P.V.C. film. See FILM, P.V.C. Irradiation

IRRADIATION, Polyamides. See POLYAMIDES, Irradiation

IRRADIATION, Preservation, Pork sausages. See SAUSAGES, Pork, Preservation, Irradiation

IRRADIATION, Silver bromide, Emulsions, Photography. See PHOTOGRAPHY, Emulsions, Silver bromide, Irradiation

IRRADIATION, Sterilisation, Catgut, Sutures. See SUTURES, Catgut, Sterilisation, Irradiation

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POLYMETHYL METHACRYLATE, Isotactic

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**LIGHT**

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- LIQUID METALS, Baths, Vat dyeing, Fabrics.** See **FABRICS, Dyeing, Vat, Liquid metal baths**
- LIQUID METALS, Embrittlement, Alpha brass.** See **BRASS, Alpha, Embrittlement, Liquid metals**
- LIQUID METALS, Lubricants.** See **LUBRICANTS, Metals, Liquid**
- LIQUID METHANE.** See **METHANE, Liquid**
- LIQUID NITROGEN.** See **NITROGEN, Liquid**
- LIQUID NITROGEN, Cold baths, Vapour input control, Pyrolytic deposition, Films.** See **FILMS, Pyrolytic deposition, Vapour input control, Cold baths, Liquid nitrogen**
- LIQUID NITROGEN, Fire prevention, Coal mining.** See **COAL, Mining, Fires, Prevention, Liquid nitrogen**
- LIQUID NITROGEN, Freezing, Sample trapping, Gas chromatography.** See **GAS CHROMATOGRAPHY, Sample trapping, Freezing, Liquid nitrogen**
- LIQUID NITROGEN, Refrigerated motor vehicles.** See **MOTOR VEHICLES, Refrigerated, Liquid nitrogen**
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- LIQUID RING PUMPS.** See **PUMPS, Liquid ring**
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- LIQUID SOLVENT EXTRACTION.** See **SOLVENT EXTRACTION, Liquid**
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- LIQUID SOLVENT EXTRACTION, Water removal, Aqueous solutions.** See **SOLUTIONS, Aqueous, Water, Removal, Solvent extraction, Liquid**
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<sup>6</sup>Li(n,p) <sup>4</sup>He

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**LOAD SHARING CONTROLLERS, Parallel operation, Synchronous alternators.** See **ALTERNATORS, Synchronous, Parallel operation, Load sharing controllers**

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**LOADERS, Cargo handling, Air transport, Freight.** See **FREIGHT, Transport, Air, Cargo handling, Loaders**

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**LOADERS, Mining, Metals.** See **METALS, Mining, Loaders**

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**LOADING**

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**UNLOADING**

**LOADING, Alumina-carrying ships.** See **SHIPS, Alumina-carrying, Loading**

**LOADING, Cameras.** See **CAMERAS, Loading**

**LOADING, Capstan lathes.** See **LATHES, Capstan, Loading**

**LOADING, Coal.** See **COAL, Loading**

**LOADING, Commercial vehicles.** See **VEHICLES, Commercial, Loading**

**LOADING, Diesel-electric locomotives.** See **LOCOMOTIVES, Diesel-electric, Loading**

**LOADING, Frozen meat.** See **MEAT, Frozen, Loading**

**LOADING, Iron ores.** See **IRON, Ores, Loading**

**LOADING, Lorries.** See **LORRIES, Loading**

**LOADING, Lorries, Fertilisers.** See **FERTILISERS, Lorries, Loading**

**LOADING, Machine tools.** See **MACHINE TOOLS, Loading**

**LOADING, Meat.** See **MEAT, Loading**

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**LOADING (Stress) Infilled steel frames, Structures.** See **STRUCTURES, Frames, Steel, Infilled, Loading**

**LOADING, Tankers, Ships.** See **TANKERS, Ships, Loading**  
**LOADING, Trailers, Motor vehicles.** See **MOTOR VEHICLES, Trailers, Low loading**

**LOADING, Vehicles, Milk.** See **MILK, Vehicles, Loading**

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**WATER, Engineering, Loch Lee**

**LOCH LOMOND**

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**WATER, Engineering, Loch Lomond**

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**ROADS, Lockerbie**

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**LOCKHEED 300 AIRCRAFT.** See **AIRCRAFT, Types, Lockheed 300**

**LOCKHEED STARLIFTER AIRCRAFT.** See **AIRCRAFT, Military, Transport, Types, Lockheed StarLifter**

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**LOCOMOTIVES**

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SHUNTERS

**LOCOMOTIVES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Driving**Manufactures**Parts**Bogies**Bar frames**Brakes**Types**Diesel**Diesel-electric**Diesel-hydraulic**Electric**Dual voltage**Electro-diesel**Gas turbine**Steam**Applications**Freight**Tramways***LOCOMOTIVES, Bar frames, Machining**

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- CENTRE FOR URBAN STUDIES
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- NEW ZEALAND HOUSE, London
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- OFFICIAL RESIDENCES, London
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 Department of Chemistry and Chemical Technology. S. Cotson.—Department of Electrical Engineering. V. P. Mendoza.—Department of Mathematics. E. A. Baggott.—Department of Mechanical Engineering. J. F. Douglas.—Department of Physics. A. J. L. Collinson.—Division of Metal Science. G. Isserlis.—Division of Food Science and Technology. D. B. Smith.—Division of Liberal Studies. I. C. Cannon. Chemistry & Industry (12 Oct 63) p.1638-45. il.

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**LOOPERS, Hot finishing, Steel strips.** See **STRIPS**, Steel, Finishing, Hot, Loopers

**LOOPS, Elliptical, Conductors.** See **CONDUCTORS**, Electrical, Elliptical loops

**LORD MILLS, Rolling, Metal, Foil.** See **FOIL**, Metal, Rolling, Lord mills

**LORD MILLS, Rolling, Metal, Strips.** See **STRIPS**, Metal, Rolling, Lord mills

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**LORRIES**

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DUMPERS

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See SHIPS, Diesel engines, Crankcases, Lubricating oils

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MOTOR CARS, Engines, Crankcases, Lubricating oils

LUBRICATING OILS, Damping, Vibrations, Bearings. See

BEARINGS, Vibrations, Damping, Lubricating oil

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LUBRICATION, Commercial vehicles. See VEHICLES, Commercial, Lubrication

LUBRICATION, Compaction, Metals, Powders. See POWDERS, Metals, Compaction, Lubrication

LUBRICATION, Dies. See DIES, Lubrication

LUBRICATION, Diesel engines, Ships. See SHIPS, Diesel engines, Lubrication

LUBRICATION, Earth moving equipment. See EARTH MOVING EQUIPMENT, Lubrication

LUBRICATION, Engines, Motor cars. See MOTOR CARS, Engines, Lubrication

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CATHODOLUMINESCENCE

CHEMILUMINESCENCE

ELECTROLUMINESCENCE

PHOTOLUMINESCENCE

LUMINOUS CEILINGS. See CEILINGS, Luminous

LUMPED PARAMETERS, Solution, Frequencies, Vibrations, Beams. See BEAMS, Vibrations, Frequencies, Solution, Lumped parameters

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INDUSTRIAL DESIGN, Luxembourg

MILK, Processing, Luxembourg

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M.G. MIDGET CARS. See MOTOR CARS, Types, M.G. Midget

M.G. MIDGET P-TYPE CARS. See MOTOR CARS, Types, M.G. Midget P-Type

MZ ES150 MOTOR CYCLES. See MOTOR CYCLES, Types, MZ ES150

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MACADAM, Dressing, Surfaces, Roads. See ROADS, Surfaces, Dressing, Macadam

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## MACHINE TOOLS

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AUTOMATICS, Machine tools

BORING

BROACHES

BROACHING, Machines

CARBIDES, Sintered

CHAMFERING

CHUCKS

CLAMPS

CROPPING, Presses

DRAWING

DRILLING, Machines

DRILLS

FIXTURES, Machine tools

GRINDING

HOBGING, Machines

JIGS

JOINERY, Machines

MACHINING

MANDRELS

METALS, Shearing

MILLING

PLANING

PLOTING MACHINES

PRESS BRAKES

PRESS TOOLS

PRESSES, Hydraulic

PRESSES, Power

PRESSES, Screw

PRESSES, Transfer

PRESSWORKING

## MACHINE TOOLS

Related Headings—cont.

PROFILING

PUNCHING

REAMERS

ROUTING

SLOTING

STAMPING

TOOLS, Diamond

TRANSFER MACHINES

TURNING

## MACHINE TOOLS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Research

Standardisation

Problems

Ergonomics

Properties

Accuracy

Technical activities

Design

Manufactures

Finishing

Maintenance

Replacement

Protection

Operation

Alignment

Loading

Lubrication

Cooling

Tool replacement

Components

Supporting devices

Vibration isolators

Gearing

Bearings

Cutters

Toolholders

Unit heads

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Electrical equipment

Electric motors

Hydraulic systems

Pneumatic equipment

Control systems

Indicator plates

Position indicators

Positioning equipment

Positioning control

Digital followers

Types of machine tools

Vibratory

Ancillaries

Warehouses

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MILK, Processing, Malta

**MALTHOUSES**

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ACRYLIC FIBRES

CELLULOSE TRIACETATE, Fibres

CRIMPLENE

FORTISAN H

NYLON, Fibres

NYLON 6, Fibres

NYLON 66, Fibres

POLYAMIDES, Fibres

POLYESTER FIBRES

POLYPROPYLENE, Fibres

POLYVINYL ALCOHOL, Fibres

RAYON

TERYLENE

TRICEL

**MAN-MADE FIBRES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*History*

Particular countries

*Russia*

Technical activities

*Manufactures*

*Carding*

*Drying*

*Finishing*

*Flameproofing*

*Waterproofing*

*Dyeing*

*Dyes*

Types of man-made fibres

*Industrial*

**MAN-MADE FIBRES, Batts.** See BATTS, Man-made fibres

**MAN-MADE FIBRES, Blankets.** See BLANKETS, Man-made fibres

**MAN-MADE FIBRES, Carding, Machines, Clothed**

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**MAN-MADE FIBRES, Carpets.** See CARPETS, Acrilan

**MAN-MADE FIBRES, Clothing.** See CLOTHING, Man-made fibres

**MAN-MADE FIBRES, Conveyor belts.** See CONVEYORS, Belts, Man-made fibres

**MAN-MADE FIBRES, Cordage.** See CORDAGE, Man-made fibres

**MAN-MADE FIBRES, Drying, Stenters**

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**MAN-MADE FIBRES, Fabrics.** See FABRICS, Man-made fibres

**MAN-MADE FIBRES, Fabrics.** See FABRICS, Nylon

**MAN-MADE FIBRES, Fabrics, Containers, Commercial vehicles.** See VEHICLES, Commercial, Containers, Fabrics, Man-made fibres

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**MANAGEMENT**

Related Headings:

PRODUCTION, Management

MANAGEMENT EDUCATION, Engineering. See ENGINEERING, Education (Management)

**MANAUS**

See

OPERA HOUSES, Manaus

**MANCHESTER**

See

AIRPORTS, Terminal buildings, Manchester

CHURCHES, Manchester

PUBLIC WORKS, Manchester

RAILWAYS, Stations, Manchester

ROADS, Traffic, Surveys, Manchester

SHIRLEY INSTITUTE

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MANEB—COPPER. See COPPER—MANEB

MANGANESE, Alloys, Effect on aluminium—copper—magnesium. See ALUMINIUM—COPPER—MAGNESIUM, Effect of manganese

MANGANESE, Effect on chill, Cast iron. See IRON, Cast, Chill, Effect of manganese

MANGANESE, Effect on fracture, Mild steel. See STEEL, Mild, Fracture, Effect of manganese

MANGANESE, Losses, Induction furnaces, Melting, Steel. See STEEL, Melting, Furnaces, Induction, Manganese losses

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**MANGANESE-NICKEL-CHROMIUM-STEEL.** See STEEL-CHROMIUM-MANGANESE-NICKEL

**MANGANESE-NICKEL-IRON.** See IRON-MANGANESE-NICKEL

**MANGANESE SILICATE**

Related Headings:

RHODONITE

**MANGANESE-STEEL.** See STEEL-MANGANESE

**MANGANESE-STEEL-CHROMIUM.** See STEEL-CHROMIUM-MANGANESE

**MANGANOUS SULPHATE-HEAVY WATER,** Neutron absorption, Calibration, Antimony-beryllium sources, Neutrons. See NEUTRONS, Sources, Antimony-Beryllium, Calibration, Neutron absorption, Manganous sulphate-Heavy water

**MANHOLES,** Sewers. See SEWERS, Manholes

**MANIKINS,** Anthropometry, Design, Architecture. See ARCHITECTURE, Design, Anthropometry, Manikins

**MANIPULATOR-HAMMERS,** Forging. See FORGING, Hammer-Manipulators

**MANIPULATORS,** Radioactive materials handling. See RADIOACTIVE MATERIALS, Handling, Manipulators

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**MARIN COUNTY** (California)

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**MARINAS,** Yacht basins. See YACHTS, Basins

**MARINE**

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SEA

**MARINE BELAYIM,** Petroleum. See PETROLEUM (Marine Belayim)

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- See TOWN PLANNING, Marly les Grands Terres

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- See NUCLEAR POWER STATIONS, Marviken

**MARYLAND**

- See HYDROELECTRIC POWER STATIONS, Conowingo PORTS, Baltimore

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MECHANICAL HANDLING, Logs. See LOGS, Handling

**MECHANICAL HANDLING, Long loads**

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MECHANICAL HANDLING, Malt production. See MALT, Production, Mechanical handling

MECHANICAL HANDLING, Meat. See MEAT, Handling

MECHANICAL HANDLING, Motor car bodies. See

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MECHANICAL HANDLING, Pottery manufacture. See POTTERY, Manufactures, Mechanical handling

MECHANICAL HANDLING, Printing paper. See PRINTING, Paper, Mechanical handling

MECHANICAL HANDLING, Road transport. See ROADS, Transport, Mechanical handling

MECHANICAL HANDLING, Rocket components. See ROCKETS, Components, Mechanical handling

MECHANICAL HANDLING, Silage. See SILAGE, Mechanical handling

**MECHANICAL HANDLING, Sorting, Electronic**

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MECHANICAL HANDLING, Steel production. See STEEL, Production, Mechanical handling equipment

MECHANICAL HANDLING, Steel scrap. See STEEL, Scrap, Mechanical handling

MECHANICAL HANDLING, Steel slabs. See SLABS, Steel, Mechanical handling

MECHANICAL HANDLING, Sterile tissue paper production. See PAPER, Tissue, Sterile, Production, Mechanical handling

MECHANICAL HANDLING, Storage, Food. See FOOD, Storage, Mechanical handling

MECHANICAL HANDLING, Storage, Motor car parts. See MOTOR CARS, Parts, Storage, Mechanical handling

MECHANICAL HANDLING, Storage, Wines. See WINES, Storage, Mechanical handling

MECHANICAL HANDLING, Storage, Wood. See WOOD, Storage, Mechanical handling

MECHANICAL HANDLING, Timber floors manufacture.

See FLOORS, Timber, Manufactures, Mechanical handling

MECHANICAL HANDLING, Tinplate production. See TINPLATE, Handling, Hover pulleys

MECHANICAL HANDLING, Tobacco. See TOBACCO, Mechanical handling

MECHANICAL HANDLING, Tractor components. See TRACTORS, Components, Mechanical handling

MECHANICAL HANDLING, Tyre manufactures. See TYRES, Manufactures, Mechanical handling

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**MECHANICAL HANDLING**, Waste recovery, Coal, Power stations. See **POWER STATIONS**, Coal, Waste recovery, Mechanical handling equipment

**MECHANICAL HANDLING**, Wood. See **WOOD**, Mechanical handling

**MECHANO-CHEMICAL METHODS**, Molecular structure studies, Plastics. See **PLASTICS**, Molecular structure, Studies, Mechano-chemical methods

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**ELECTROCARDIOGRAPHS**  
**ELECTROENCEPHALOGRAPHY**  
**HEART**, Foetal, Pulses, Measurement, Equipment  
**HEART**, Stimulators, Oscillators, Blocking  
**NEUROPHYSIOLOGY**, Electronics  
**RADIO**, Pills  
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**STIMULATORS**, Electronics

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**BRAIN**, Surgery, Refrigeration, Equipment  
**CANCER**, Treatment, Equipment  
**HEART-LUNG MACHINES**  
**HYPOTHERMIA**, Heat exchangers  
**OPHTHALMOLOGICAL EQUIPMENT**  
**PIPETTES**, Proportioning  
**PLETHYSMOGRAPHS**  
**PROSTHESES**  
**RESUSCITATION**, Machines  
**STERILISERS**  
**SURGICAL EQUIPMENT**  
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**TRAMWAYS**, Meiringen

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**RIVERS**, Floods, Control, Mekong

**MELBOURNE**

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**PORTS**, Melbourne

**MELTED BORATE GLASS**. See **GLASS**, Borate, Melted

**MELTED SILICATE GLASS**. See **GLASS**, Silicate, Melted

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**RE-MELTING**

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**MELTING**, Glass. See **GLASS**, Melting

**MELTING**, Gunmetal. See **GUNMETAL**, Melting

**MELTING**, Nodular iron. See **IRON**, Nodular, Melting

**MELTING**, Pressure, Hydrogen. See **HYDROGEN**, Melting pressure

**MELTING**, Refractory metals. See **METALS**, Refractory, Melting

**MELTING**, Steel. See **STEEL**, Melting

**MELTING**, Swarf, Cast iron. See **IRON**, Cast, Swarf, Melting

**MELTING, Vacuum, Furnaces**

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**MELTON MOWBRAY**

See

**PRODUCTION ENGINEERING RESEARCH ASSOCIATION**

**MEMBRANE GROUTING**, Barriers, Water engineering. See **WATER**, Engineering, Barriers, Soil, Grouting

**MEMBRANE PACKS**, Electrodialysis, Saline water. See **WATER**, Saline, Electrodialysis, Membrane packs

**MEMBRANE STRESSES**, Compressive, Reinforced concrete, Beams. See **BEAMS**, Concrete, Reinforced, Compressive membrane stresses

**MEMBRANE STRESSES**, Compressive, Reinforced concrete, Slabs. See **SLABS**, Concrete, Reinforced, Compressive membrane stresses

**MEMBRANE STRESSES**, Cooling towers. See **COOLING**, Towers, Membrane stresses

**MEMBRANE WALLS**, Furnaces, Water tube boilers. See **BOILERS**, Water tube, Furnaces, Membrane walls

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**MERCEDES-BENZ 180D CARS**. See **MOTOR CARS**, Types, Mercedes-Benz 180D

**MERCEDES-BENZ 190C CARS**. See **MOTOR CARS**, Types, Mercedes-Benz 190C

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**MERCEDES-BENZ 300 SE CARS**. See **MOTOR CARS**, Types, Mercedes-Benz 300 SE

**MERCEDES-BENZ 600 CARS**. See **MOTOR CARS**, Types, Mercedes-Benz 600

**MERCERISING**, Solutions, Cotton. See **COTTON**, Mercerising solutions

**MERCURY**, Alloys

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**AMALGAM**

**MERCURY**, Cathodes. See **CATHODES**, Mercury

**MERCURY, Crystallisation, Studies, Field emission**

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**MERCURY**, Displacement, Bulk density determination, Cermets. See **CERMETS**, Bulk density, Determination, Mercury displacement method

**MERCURY**, Electrodes. See **ELECTRODES**, Mercury

**MERCURY**, Electrodes, Adsorption, Polyethylene glycols, Accelerators, Developers, Photography. See **PHOTOGRAPHY**, Developers, Accelerators, Polyethylene glycols, Adsorption, Electrodes, Mercury

**MERCURY**, Electrodes, Electrocapillarity studies. See **ELECTROCAPILLARITY**, Studies, Electrodes, Mercury

**MERCURY**, Vapour, Density, Fluorescent lamps. See **LAMPS**, Fluorescent, Mercury-vapour density

**MERCURY**, Vapour, Gas discharge tubes. See **ELECTRON TUBES**, Gas discharge, Mercury vapour-inert gases

**MERCURY ARC CONVERTERS**, D.C. motors. See **ELECTRIC MOTORS**, D.C., Converters, Mercury arc

**MERCURY ARC RECTIFIERS**. See **RECTIFIERS**, Mercury arc

**MERCURY ARC RECTIFIERS**, D.C. motors, Rolling, Steel, Billets. See **BILLETS**, Steel, Rolling, Electric motors, D.C., Rectifiers, Mercury arc

**MERCURY ARC RECTIFIERS**, Power supplies, Proton synchrotrons. See **SYNCHROTRONS**, Proton, Power supplies, Rectifiers, Mercury arc

**MERCURY ARC SWITCHES**, Electrical equipment, Plasmas.

See **PLASMAS**, Electrical equipment, Switches, Mercury arc

**MERCURY BULB FLUORESCENT LAMPS**, Lighting, Factories. See **FACTORIES**, Lighting, Lamps, Fluorescent, Mercury bulb

**MERCURY-IN-STEEL THERMOMETERS**. See **THERMOMETERS**, Mercury-in-steel

**MERCURY-INERT GASES**, Fluorescent lamps. See **LAMPS**, Fluorescent, Mercury-inert gases mixtures

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 METAL-COATED PAPERS, Packaging. See PACKAGING, Papers, Metal-coated

METAL FILM RESISTORS. See RESISTORS, Metal film

METAL-METAL-ION ELECTRODES. See ELECTRODES, Metal-metal-ion

METAL OXIDE FILM RESISTORS. See RESISTORS, Metal oxide film

METALLIC FABRICS. See FABRICS, Metallic

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Related Headings:

ELECTROMETALLURGY

HYDROMETALLURGY

IRON, Production

MAGNESIUM, Production

METALLOGRAPHY

SMELTING

STEEL, Production

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**METALLURGY, Nuclear reactors.** See NUCLEAR REACTORS, Metallurgy

**METALLURGY, Prehistory, Great Britain**

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**METALLURGY, Research, Miniaturisation**

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**METALLURGY, Technicians, Examinations**

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**METALS**

## Related Headings :

ALLOYS  
ALUMINIUM  
ANTIMONY  
BARIUM  
BERYLLIUM  
BISMUTH  
BRASS  
CADMIUM  
CAESIUM  
CALCIUM  
CERIUM  
CHROMIUM  
COBALT  
COPPER  
GALLIUM  
GERMANIUM  
GOLD  
HAFNIUM  
INDIUM  
IRIDIUM  
IRON  
LEAD  
LITHIUM  
MAGNESIUM  
MANGANESE  
MERCURY  
MOLYBDENUM  
NEPTUNIUM  
NICKEL  
NIOBIUM  
NON-FERROUS METALS  
ORES  
PALLADIUM  
PLATINUM  
PLATINUM METALS  
PLUTONIUM  
POLONIUM  
PRECIOUS METALS  
RARE EARTHS  
RHENIUM  
RUTHENIUM  
SAMARIUM  
SCANDIUM  
SELENIUM  
SILVER  
STRONTIUM  
TANTALUM  
TELLURIUM  
THALLIUM  
THORIUM  
TIN  
TITANIUM  
TRANSITION METALS  
TUNGSTEN  
URANIUM  
VANADIUM  
YTTERBIUM  
ZINC  
ZIRCONIUM

**METALS—SUBHEADINGS—Synopsis—cont.**

Torsion  
Density-Tensile strength relationship  
Hardness  
Microhardness  
Deformation  
Creep  
Fatigue  
Cracking  
Embrittlement  
Brittle fracture  
Surfaces  
Friction  
Wear  
Electromagnetic properties  
Magnetic fields  
Electrotransport  
Nuclear properties  
Neutron scattering  
*Cr, itals*  
Grain structure  
Grain boundaries  
Thermodynamics  
Phase equilibrium diagrams  
Chemistry  
Oxidation  
Scale  
Resistance to..  
Analysis  
Determination of  
Spectroscopy  
Solvent extraction

## Technical activities

Testing  
Mining  
Manufactures  
Forming  
Electroforming  
Extrusion  
Cutting  
Shearing  
Compression  
Bonding  
Heating  
Hardening  
Marking  
Finishing  
Cleaning  
De-greasing  
Pickling  
Drying  
Coating  
Coatings  
Painting  
Paint  
Enamelling  
Spraying  
Printing

## States and types of metals

Liquid  
Cubic  
Body centred cubic  
Face centred cubic  
Fatigue stressed  
Strain aged  
Precipitation hardened  
Cold worked  
Porous

**METALS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Physical & chemical aspects

Mechanical properties

Strength

Tensile strength

## METALS—SUBHEADINGS—Synopsis—cont.

Expanded  
Composite  
Reinforced  
Refractory  
Reactive

**METALS, Agricultural machinery materials.** See AGRICULTURAL MACHINERY, Materials, Metals

**METALS, Bars.** See BARS, Metal

**METALS, Bellows, Joints, Pipes.** See PIPES, Joints, Bellows, Metal

**METALS, Body-centred cubic, Interstitial diffusion, Activation energy, Effect of solubility**

Interstitial solid solutions in body-centred cube metals.

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**METALS, Bonded, Shielding, Mobile nuclear reactors.** See NUCLEAR REACTORS, Mobile, Shielding, Metals, Bonded

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**METALS, Bonding, Adhesives, Curing, Jigs**

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Related Headings:

ALUMINIUM, Anodising

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ALUMINIUM, Rolling

BARS, Steel

BILLETS

BRAZING

CASTING

CASTINGS

COPPER, Extrusion

FOIL

FOIL, Metal

FORGING

FORGINGS

FOUNDRIES

HEAT, Treatment

HOT WORKING

INGOTS

IRON, Foundries

IRON, Manufactures

MELTING

NON-FERROUS METALS, Foundries

PANELS, Metal

PLATES, Metals

RODS, Aluminium

ROLL FORGING

ROLLING

ROLLS

SECTIONS

SECTIONS, Aluminium alloys

SHEETS, Metals

**METALS, Manufactures**

Related Headings—cont.

SLABS, Steel

SOLDERING

STEEL, Extrusion

STEEL, Forging

STEEL, Heat treatment

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**METALS, Powders.** See **POWDERS**, Metals

**METALS, Powders, Refractory nitride production.** See

**NITRIDES**, Refractories, Production, Powders, Metals

**METALS, Powders, Refractory oxide production.** See **OXIDES**, Refractories, Production, Powders, Metals

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Sheets, Metal

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TUBES, Manufactures, Sheets, Metal

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Fluorescent, Fittings, Sheets, Metal

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#### METEOROLOGY

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FOG  
FROST DAMAGE  
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FUNGICIDAL  
STERILISATION  
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SUB-MILLIMETRE WAVE FREQUENCY

MILLIMETRE WAVE FREQUENCY, Attenuation, Waveguides.

See WAVEGUIDES, Attenuation, Millimetre wave frequency

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MILLING, Animal feedingstuffs. See ANIMAL FEEDING-STUFFS, Milling

MILLING, Cast iron, Segments, Linings, Tunnels. See TUNNELS, Linings, Segments, Iron, Cast, Milling

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**MILLS, Grinding modification determination, Extracts, Malt.** See **MALT, Extracts, Modification, Determination, Grinding, Mills**

**MILLS, Hot rolling, Steel.** See **STEEL, Rolling, Hot, Mills**

**MILLS, Hot rolling, Steel strips.** See **STRIPS, Steel, Rolling, Hot, Mills**

**MILLS, Paper.** See **PAPER, Mills**

**MILLS, Pendulum, Rolling, Metal strips.** See **STRIPS, Metal, Rolling, Mills, Pendulum**

**MILLS, Rolling.** See **ROLLING, Mills**

**MILLS, Rolling, Aluminium.** See **ALUMINIUM, Rolling, Mills**

**MILLS, Rolling, Steel.** See **STEEL, Rolling, Mills**

**MILLS, Rolling, Steel, Bars.** See **BARS, Steel, Rolling, Mills**

**MILLS, Rolling, Steel, Beams.** See **BEAMS, Steel, Rolling, Mills**

**MILLS, Rolling, Steel, Billets.** See **BILLETS, Steel, Rolling, Mills**

**MILLS, Rolling, Steel, Ingots.** See **INGOTS, Steel, Rolling, Mills**

**MILLS, Rolling, Steel, Rods.** See **RODS, Steel, Rolling, Mills**

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#### MINING

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 BOREHOLES  
 GRAVEL, Pits  
 MINERAL DRESSING  
 MINES  
 OFF SHORE DRILLING  
 PIT-PROPS  
 PROSPECTING  
 QUARRYING

ROCK, Drills

#### MINING-SUBHEADINGS-Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

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- MOIRÉ FRINGES, Interferometry, Length measurement.** See **LENGTH, Measurement, Interferometry, Moiré fringe**
- MOIRÉ FRINGES, Interferometry, Positioning control, Machine tools.** See **MACHINE TOOLS, Positioning control, Interferometry, Moiré fringe**
- MOIRÉ PATTERNS, Intaglio half-tone illustrations.** See **ILLUSTRATIONS, Half-tone, Intaglio, Moiré patterns**
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HYGROMETERS
- MOISTURE, Body, Losses, Effect on thermal equilibrium, Clothing.** See **CLOTHING, Thermal equilibrium, Effect of body moisture losses**
- MOISTURE, Building materials.** See **BUILDING, Materials, Moisture**
- MOISTURE, Clay.** See **CLAY, Moisture**
- MOISTURE, Damage, Cargoes.** See **CARGOES, Damage, Moisture**
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- MOISTURE, Pulp.** See **PULP, Moisture content**
- MOISTURE, Soil.** See **SOIL, Moisture**
- MOISTURE, Textiles.** See **TEXTILES, Moisture content**
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**MOLECULAR WEIGHT-VISCOSITY RELATIONSHIP, Molten polystyrene.** See **POLYSTYRENE, Molten, Viscosity-Molecular weight relationship**  
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**MOLTEN ALUMINIUM ALLOYS.** See **ALUMINIUM, Alloys, Molten**  
**MOLTEN CADMIUM CHLORIDE-POTASSIUM CHLORIDE.** See **CADMIUM CHLORIDE-POTASSIUM CHLORIDE, Molten**  
**MOLTEN CHLORIDES, Electrolytes, Cadmium, Electrodes.** See **ELECTRODES, Cadmium, Molten chloride electrolytes**  
**MOLTEN CHLORIDES, Electrolytes, Potential, Reference electrodes.** See **ELECTRODES, Reference, Potential, Molten chloride electrolytes**  
**MOLTEN LEAD, Annealing, Steel, Wires.** See **WIRES, STEEL, Annealing, Lead, Molten**



**MOLTEN METALS**, Soldering beads, Transistor manufactures.

See **TRANSISTORS**, Manufactures, Soldering beads, Metal, Molten

**MOLTEN POLYMERS**. See **POLYMERS**, Molten

**MOLTEN POLYSTYRENE**. See **POLYSTYRENE**, Molten

**MOLTEN POTASSIUM CHLORIDE-LITHIUM CHLORIDE**. See **LITHIUM CHLORIDE-POTASSIUM CHLORIDE**, Molten

**MOLTEN SALT**, Corrosion, Single crystals, Silver. See

**SILVER**, Crystals, Single, Corrosion, Molten salt

**MOLTEN SALT ELECTROLYTES**, Electrorefining, Uranium. See **URANIUM**, Electrorefining, Molten salt electrolytes

**MOLTEN SALT ELECTROLYTES**, Potential, Reference electrodes. See **ELECTRODES**, Reference, Potential, Molten salt electrolytes

**MOLTEN SALT REACTORS**. See **NUCLEAR REACTORS** (Molten salt)

**MOLTEN SALTS**. See **SALTS**, Molten

**MOLTEN SALTS**, Heat transfer media. See **HEAT**, Transfer, Media, Molten salts

**MOLTEN SILVER HALIDES**. See **SILVER HALIDES**, Molten

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**MOLYBDENUM**, Collectors, Electron emission, Gas discharge. See **GAS DISCHARGE**, Electron emission (Molybdenum collectors)

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**MOLYBDENUM-STEEL-CHROMIUM**, Pipes, Refineries, Petroleum. See **PETROLEUM**, Refineries, Pipes, Steel-Chromium-Molybdenum

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**MOTOR CARS—SUBHEADINGS—Synopsis—cont.***Transmissions**Gearboxes**Gears**Laygears**Clutches**Rear axles**Stub axles**Steering assemblies**Brakes**Handbrakes**Wheels**Tyres**Bodies**Aerodynamics**Base units**Colour**Paint**Trim**Upholstery**Seats**Back rests**Head rests**Doors**Windows**Windscreens**Engines**Diesel engines**Gas turbines**Carburettors**Exhaust pipes**Radiators**Electrical equipment**Switches**Alternators**Starters**Lamps**Headlights**Electronic equipment**Mirrors**Dashboards**Controls**Accelerators**Instruments**Tachometers**Heaters**Air conditioning**Ventilation**Accessories**Winter equipment**Radio receivers**Safety belts**Fire extinguishers**Bumpers**Performance**Braking**Fuel consumption**Riding qualities**Types**Rear engined**Three wheeler**Refrigerated**Steam**Racing**Amphibious**Ancillaries**Workshops**Transporters**Ferries***MOTOR CARS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*History**Technical data**Problems**Noise**Safety**Technical activities**Design**Manufactures**Assembly**Modification**Conversion**Tuning kits**Tests**Road tests**Maintenance**Servicing**Operation**Driving**Parts**Structures**Base units**Chassis**Suspensions**Shock absorbers**Springs*

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Machining hypoid pinions: Vauxhall linked line incorporates interesting transfer devices. *Automobile Engr.*, 53 (Nov 63) p.490-3. il.

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**MOTOR CARS, Riding qualities**

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Road test no.3/63: Ford Cortina Super 1500. *Motor*, 122 (23 Jan 63) p.980-5. il.

**MOTOR CARS, Types, Ford Falcon Sprint Convertible, Road tests**

Autocar road test 1953: Ford Falcon Sprint Convertible 4,261 c.c. *Autocar*, 119 (13 Dec 63) p.1134-8. il.

**MOTOR CARS, Types, Ford Galaxie 500, Road tests**

Road test no.30/63: Ford Galaxie 500. *Motor*, 123 (31 Jul 63) p.46-9. il.

**MOTOR CARS, Types, Ford Mustang**

At grips with the Mustang: details and road impressions of Ford's two-seater prototype. *Autocar*, 119 (1 Nov 63) p.888-9. il.

Unbelievable superior automobile...and other stories, pt.3: gone West. R. Bensted-Smith. *Motor*, 123 (27 Mar 63) p.275+. il.

**MOTOR CARS, Types, Ford Taunus 12M TS**

Road impressions: Ford Taunus 12M TS. *Autocar*, 118 (12 Apr 63) p.617. il.

**MOTOR CARS, Types, Ford Zephyr 6, Road tests**

Road test No.12/63: Ford Zephyr 6 (automatic) *Motor*, 123 (27 Mar 63) p.269-71. il.

**MOTOR CARS, Types, Hillman Imp**

Hillman Imp. *Autocar*, 118 (3 May 63) p.i-753. il.

Hillman Imp. *Motor*, 123 (8 May 63) p.74-8. il.

Hillman Imp is Rootes' new baby. *Engineering*, 195 (3 May 63) p.612-13. il.

**MOTOR CARS, Types, Hillman Imp de luxe, Road tests**

Extended road test no.18/63: Hillman Imp (de luxe). *Motor*, 123 (8 May 63) p.80-4. il.

Road test no.1921: Hillman Imp de luxe 875 c.c. *Autocar*, 118 (3 May 63) p.746-50. il.

**MOTOR CARS, Types, Hillman Minx Series V**

Hillman Minx Series V. *Autocar*, 119 (6 Sep 63) p.420-1. il.

New series Hillman Minx. *Motor*, 124 (4 Sep 63) p.56-8. il.

**MOTOR CARS, Types, Hillman Minx Series V, Road tests**

Extended road test no.42/63: Hillman Minx series V.

*Motor*, 124 (6 Nov 63) p.52-7. il.

**MOTOR CARS, Types, Honda Sports 500**

Honda 500 Sport. S. Kobayashi. *Autocar*, 110 (15 Nov 63) p.960-1. il.

**MOTOR CARS, Types, Humber Hawk 3, Road tests**

Autocar road tests 1951: Humber Hawk Mark III 2,267 c.c.

*Autocar*, 119 (29 Nov 63) p.1044-8. il.

**MOTOR CARS, Types, Humber Sceptre**

Humber Sceptre. *Autocar*, 118 (18 Jan 63) p.90-3. il.

Younger Humber. *Motor*, 122 (16 Jan 63) p.935-8. il.

**MOTOR CARS, Types, Humber Sceptre, Road tests**

Autocar road test 1927: Humber Sceptre 1,592 c.c. *Autocar*, 118 (14 Jun 63) p.1034-8. il.

Road test no.24/63: Humber Sceptre. *Motor*, 123 (19 Jun 63) p.48-51. il.

**MOTOR CARS, Types, Innocenti IM3**

Innocenti-Morris 1100. *Autocar*, 118 (3 May 63) p.770. il.

Italian style (Innocenti's B.M.C. 1100—the IM3) *Autocar*, 119 (29 Nov 63) p.1056-8. il.

**MOTOR CARS, Types, Jaguar**

Jag belt. R. Bensted-Smith. *Motor*, 124 (4 Sep 63) p.42+. il.

**MOTOR CARS, Types, Jaguar E-type, Road tests**

Autocar road test 1920: Jaguar E-type, 3,781 c.c. *Autocar*, 118 (26 Apr 63) p.692-6. il.

**MOTOR CARS, Types, Jaguar 3.8 Mk. 2**

On tour with a record-breaker: Geneva to Coventry in the Monza Jaguar. S. Bladon. *Autocar*, 118 (3 May 63) p.758-60. il.

**MOTOR CARS, Types, Jaguar 3.8 Mk 2, Road tests**

Autocar road test 1917: Jaguar 3.8 Mark 2 Automatic.

*Autocar*, 118 (5 Apr 63) p.566-70. il.

**MOTOR CARS, Types, Jaguar Mk.10**

Jaguar Mark X, pt.1: development of the power unit; description of the clutch, gearbox and the final drive assembly. *Automobile Engr.*, 53 (Aug 63) p.344-53. il. ref.

Jaguar Mark X, pt.2: a design analysis of the rear suspension and front suspension; details of the power-assisted steering system. *Automobile Engr.*, 53 (Sep 63) p.398-405. il.

Jaguar Mark X, pt.3: the braking system, integral chassis-body structure, fuel system and electrical equipment. *Automobile Engr.*, 53 (Nov 63) p.474-80. il.

Mk 10 Jaguar has grace, space and peace. *Engineering*, 196 (19 Jul 63) p.74-5. il.

**MOTOR CARS, Types, Jaguar Mk.10, Road tests**

Extended road test no.44/63: Jaguar Mk 10 with overdrive. *Motor*, 124 (20 Nov 63) p.50-5. il.

**MOTOR CARS, Types, Jaguar S-type**

Intermediate Jaguar. *Motor*, 124 (2 Oct 63) p.74+. il.

Jaguar S-type: new intermediate model bridges the gap.

*Autocar*, 119 (4 Oct 63) p.609-12. il.

**MOTOR CARS, Types, Jensen C-V8, Road tests**

Autocar road test 1922: Jensen C-V8 5,916 c.c. *Autocar*, 118 (10 May 63) p.800-4. il.

Road test no.29/63: Jensen C-V8. *Motor*, 123 (24 Jul 63) p.46-9. il.

**MOTOR CARS, Types, Lagonda, Road tests**

Were those the days?: supercharged 4½-litre Bentley & supercharged 2-litre Lagonda. *Autocar*, 118 (8 Feb 63) p.239-42. il.

**MOTOR CARS, Types, Lancia**

More thrust for Lancias. *Motor*, 124 (11 Sep 63) p.49-50. il.

**MOTOR CARS, Types, Lancia Fulvia**

Lancia Fulvia. *Autocar*, 118 (8 Mar 63) p.386-90. il.

Lancia Fulvia. *Motor*, 123 (13 Mar 63) p.194+. il.

Trying the Mercedes 230 SL and the Lancia Fulvia... two from the top. *Autocar*, 118 (28 Mar 63) p.518-20. il.

**MOTOR CARS, Types, Lotus Elite, Road tests**

Road test no. 19/63: Lotus Elite (special equipment)

*Motor*, 123 (15 May 63) p.40-3. il.

**MOTOR CARS, Types, Lotus Super Seven (1500) Road tests**

Road test No.17/63: Lotus Super Seven (1500) *Motor*, 123 (1 May 63) p.48-51. il.

**MOTOR CARS, Types, MG 1100, Road tests**

Road test no.7/63: MG 1100. *Motor*, 123 (20 Feb 63) p.86-9. il.

**MOTOR CARS, Types, M.G. MGB 1800**

What the MGA lacked is now in the MGB. *Engineering*, 196 (6 Sep 63) p.292-3. il.

**MOTOR CARS, Types, M.G. Midget, Conversions**

Spritely Midget: 105 m.p.h. from a Speedwell-tuned M.G.

*Motor*, 123 (8 May 63) p.57+. il.

**MOTOR CARS, Types, M.G. Midget, Road tests**

Autocar road test 1948: M.G. Midget 1,098 c.c. *Autocar*, 119 (8 Nov 63) p.909-13. il.

**MOTOR CARS, Types, M.G. Midget P-Type, Road tests**

Were those the days? 1934 M.G. Midget P-type two-seater.

*Autocar*, 119 (6 Dec 63) p.1104-5. il.

**MOTOR CARS, Types, Maserati 3500 GTI Sebring, Road tests**

Road test 1942: Maserati 3500 GTI Sebring 3,485 c.c.

*Autocar*, 119 (27 Sep 63) p.562-6. il.

**MOTOR CARS, Types, Mercedes-Benz**

German developments, pt.1: Mercedes & Porsche. C.

Bulmer. *Motor*, 124 (18 Dec 63) p.48-51. il.



**MOTOR CARS, Types, Mercedes-Benz 130H, Road tests**

Were those the days? pt.2: 1934 12h.p. Mercedes-Benz 130H & 1931 10h.p. Trojan Saloon. Autocar, 118 (12 Apr 63) p.620-2. il. refs.

**MOTOR CARS, Types, Mercedes-Benz 180D**

Motoring in a Mercedes-Benz 180D. Autocar, 119 (23 Aug 63) p.335-6. il.

**MOTOR CARS, Types, Mercedes-Benz 190C, Road tests**

Autocar road test 1938: Mercedes-Benz 190C automatic 1,897 c.c. Autocar, 119 (30 Aug 63) p.371-5. il.

**MOTOR CARS, Types, Mercedes-Benz 220 SE, Road tests**

Used cars on the road: 1961 Mercedes-Benz 220SE. Autocar, 118 (28 Jun 63) p.1135. il.

**MOTOR CARS, Types, Mercedes-Benz 230 SL**

Mercedes-Benz 230SL replaces the 190SL. Motor, 123 (13 Mar 63) p.207-8. il.

Mercedes sports car. Autocar, 118 (15 Mar 63) p.441A-B. il. Trying the Mercedes 230 SL and the Lancia Fulvia... two from the top. Autocar, 118 (28 Mar 63) p.518-20. il.

**MOTOR CARS, Types, Mercedes-Benz 300SE, Road tests**

Road test No.9/63: Mercedes-Benz 300 SE. Motor, 123 (6 Mar 63) p.159-61. il.

**MOTOR CARS, Types, Mercedes-Benz 600**

Mercedes for state occasions. Motor, 124 (4 Sep 63) p.34-5. il.

New Grosser Mercedes. Autocar, 119 (6 Sep 63) p.416-19. il.

**MOTOR CARS, Types, Morgan Plus Four Plus**

Morgan Plus Four Plus: closed glass fibre body. Autocar, 119 (4 Oct 63) p.619-20. il.

**MOTOR CARS, Types, Morris 1100**

Morris 1100. R. Bell. Motor, 124 (25 Sep 63) p.57-60. il.

**MOTOR CARS, Types, Morris 1100, Conversions**

Headstrong Morris 1100: Speedwell modifications greatly improve B.M.C.'s latest small car. Motor, 123 (6 Feb 63) p.15. il.

**MOTOR CARS, Types, Morris 1100, Road tests**

Long look: two Morris 1100s for 12 months. Autocar, 119 (15 Nov 63) p.966-9. il.

**MOTOR CARS, Types, Morris Mini, Conversions**

Improving the performance of popular cars: Taurus-Tuned Mini and Mini-Cooper. Autocar, 118 (1 Mar 63) p.379. il.

Mini for sir: luxurious Mini de Villes from Harold Radford. Motor, 123 (17 Apr 63) p.51. il.

Radford Minis. Autocar, 118 (19 Apr 63) p.645. il.

**MOTOR CARS, Types, Morris Mini-Cooper**

There was a wee Cooper: Mini-Cooper 12,000 mile report. E. Dymock. Motor, 124 (4 Dec 63) p.34-7. il.

**MOTOR CARS, Types, Morris Mini-Cooper, Conversions**

Mini most: 104 m.p.h. with a Speedwell Mini-Cooper. Motor, 124 (4 Dec 63) p.68-9. il. ref.

**MOTOR CARS, Types, Morris Mini Cooper S, Road tests**

Road test no.16/63: Morris Cooper S. Motor, 123 (24 Apr 63) p.54-7. il.

**MOTOR CARS, Types, Morris Minor 1000, Road tests**

Road test no.2/63: Morris 1000. Motor, 122 (9 Jan 63) p.882-5. il.

**MOTOR CARS, Types, Morris Oxford Diesel**

Morris Oxford diesel. Engineering, 195 (28 Jun 63) p.867. il.

Morris Oxford diesel. Motor, 123 (29 May 63) p.77. il. ref.

**MOTOR CARS, Types, Morris Oxford Series VI, Road tests**

Road test no.20/63: Morris Oxford Series VI. Motor, 123 (22 May 63) p.74-7. il.

**MOTOR CARS, Types, NSU Prinz 1100**

Larger NSU saloon. Autocar, 119 (6 Sep 63) p.447-8. il.

**MOTOR CARS, Types, NSU Sport Prinz**

At last—an NSU Wankel. Autocar, 119 (13 Sep 63) p.465-6. il.

**MOTOR CARS, Types, NSU Sport Prinz, Road tests**

Road test no.35/63: NSU Sport Prinz. Motor, 124 (4 Sep 63) p.48-51. il.

**MOTOR CARS, Types, Opel Rekord**

Restyled Opel Rekords. O. G. W. Fersen. Autocar, 118 (8 Mar 63) p.422-3. il.

**MOTOR CARS, Types, Panhard PL 24**

New Panhard models. Autocar, 118 (28 Jun 63) p.1140. il.

**MOTOR CARS, Types, Peugeot 404, Road tests**

Road test No.21/63: Peugeot 404. Motor, 123 (29 May 63) p.72-5. il.

**MOTOR CARS, Types, Pontiac Super Stock**

Portrait of a Super-Stock. R. Huntington. Autocar, 118 (26 Apr 63) p.706-7. il.

**MOTOR CARS, Types, Porsche**

German developments, pt.1: Mercedes & Porsche. C. Bulmer. Motor, 124 (18 Dec 63) p.48-51. il.

**MOTOR CARS, Types, Porsche 904, Carrera GTS**

Porsche 904 Carrera GTS. Autocar, 119 (6 Dec 63) p.1088+. il.

**MOTOR CARS, Types, Rambler Classic, Road tests**

Road test no.28/63: Rambler Classic 6 660. Motor, 123 (17 Jul 63) p.46-9. il.

**MOTOR CARS, Types, Renault Floride Cagivelle, Road tests**

Road test No.1912: Renault Floride Caravelle 956cc. Autocar, 118 (1 Mar 63) p.352-6. il.

**MOTOR CARS, Types, Renault R8**

Renault R8: lively French newcomer. Engineering, 195 (19 Apr 63) p.533. il.

**MOTOR CARS, Types, Riley Elf**

Bigger engine for Wolseley Hornet and Riley Elf. Autocar, 118 (22 Mar 63) p.505. il.

**MOTOR CARS, Types, Riley Elf, Conversions**

Improving the performance of popular cars: Speedwell Riley Elf 110 m.p.h. from 1,150 c.c. Autocar, 119 (20 Dec 63) p.1192-3. il.

**MOTOR CARS, Types, Riley Elf Mk.2, Road tests**

Road test no.27/63: Riley Elf Mk 2. Motor, 123 (10 Jul 63) p.46-9. il.

**MOTOR CARS, Types, Rolls-Royce Silver Cloud 3, Road tests**

Autocar road test 1935: Rolls-Royce Silver Cloud III.

Autocar, 119 (9 Aug 63) p.234-8. il.

Extended road test no.33/63: Rolls-Royce Silver Cloud III.

Motor, 124 (21 Aug 63) p.39-43. il.

**MOTOR CARS, Types, Rover 3 litre Automatic**

Rover 3 litre automatic. Engineering, 195 (8 Mar 63) p.344. il.

**MOTOR CARS, Types, Rover, 3 Litre Coupé, Road tests**

Autocar road test 1930: Rover 3-litre Coupé 2,995 c.c.

Autocar, 119 (5 Jul 63) p.10-14. il.

**MOTOR CARS, Types, Rover 110, Road tests**

Road test no.2/64: Rover 110. Motor, 122 (30 Jan 63) p.1004-7. il.

**MOTOR CARS, Types, Rover 2000**

Luxury 2-litre car, pt.1. Engineer, 216 (18 Oct 63) p.635-6. il.

Rover 2000. Autocar, 119 (11 Oct 63) p.653-8. il.

Rover 2000. Motor, 124 (9 Oct 63) p.98+. il.

Rover 2000: a new car with a new image. Engineering, 196 (11 Oct 63) p.458-9. il.

**MOTOR CARS, Types, Rover 2000, Road tests**

Autocar road test 1944: Rover 2000 1,978 c.c. Autocar, 119 (11 Oct 63) p.659-63. il.

Extended road test no.39/63: Rover 2000. Motor, 124 (9 Oct 63) p.106-11. il.

**MOTOR CARS, Types, Rover P5**

Rover research and development. Automobile Engr., 53 (Jan 63) p.10-11

**MOTOR CARS, Types, Saab 96, Road tests**

Road test no.32/63: Saab 96. Motor, 124 (14 Aug 63) p.38-41. il.



**MOTOR CARS, Types, Simca 1000 Special, Road tests**

Autocar road test No.1915: Simca 1000 special 944 c.c.

Autocar, 118 (22 Mar 63) p.482-6. il.

Road test no.25/63: Simca 1000 Special. Motor, 123 (26 Jun 63) p.68-73. il.

**MOTOR CARS, Types, Simca 1300 GL, Road tests**

Autocar road test 1928: Simca 1300 GL 1,290 c.c. Autocar,

118 (21 Jun 63) p.1078-82. il.

**MOTOR CARS, Types, Singer Gazelle Series V**

No greasers on the new Gazelle: easier maintenance and detail improvements on re-styled series V Singer.

Motor, 124 (18 Sep 63) p.66-7. il.

Singer Gazelle Series V. Autocar, 119 (13 Sep 63) p.464. il.

**MOTOR CARS, Types, Singer Nine Le Mans, Road tests**

Were those the days? 1934 Singer Nine Le Mans. Autocar,

119 (6 Dec 63) p.1102-4. il.

**MOTOR CARS, Types, Singer Vogue 2, Road tests**

Autocar road test 1940: Singer Vogue Mk.II 1,592 c.c. Autocar, 119 (13 Sep 63) p.468-72. il.

**MOTOR CARS, Types, Skoda**

Eric Dymock makes a Czech on Tatras and Skodas. Motor, 123 (20 Mar 63) p.237-40. il.

**MOTOR CARS, Types, Skoda Octavia Super, Road tests**

Road test no.22/63: Skoda Octavia Super. Motor, 123 (5 Jun 63) p.48-51. il.

**MOTOR CARS, Types, Standard-Triumph**

Current Herald, Spitfire, Vitesse models. Autocar, 119 (26 Jul 63) p.140. il.

Herald, Spitfire, Vitesse—a Triumph Herald family review.

Autocar, 119 (26 Jul 63) p.136-9. il.

**MOTOR CARS, Types, Standard-Triumph 2000**

Entirely new two-litre "six" from Triumph. Motor, 124

(16 Oct 63) p.120+. il.

Triumph 2000. Autocar, 119 (18 Oct 63) p.731-5. il.

Triumph 2000—further details. Autocar, 119 (25 Oct 63) p.837. il.

**MOTOR CARS, Types, Standard-Triumph Herald**

Living with a Herald. Autocar, 119 (26 Jul 63) p.171. il.

**MOTOR CARS, Types, Standard-Triumph Herald 12/50**

Herald 12/50. Autocar, 118 (8 Mar 63) p.392-3. il.

New Herald—the 12/50. Motor, 123 (6 Mar 63) p.165-6. il.

Triumph Herald 12/50: 12,000-mile report. J. A. Kyd.

Motor, 124 (18 Sep 63) p.61-4. il.

**MOTOR CARS, Types, Standard-Triumph Herald 12/50, Road tests**

Autocar road test 1934: Triumph Herald 12/50 1,147 c.c.

Autocar, 119 (2 Aug 63) p.190-4. il.

**MOTOR CARS, Types, Standard-Triumph Spitfire**

Fun in a Triumph Spitfire 4. Engineering, 195 (17 May 63) p.678. il.

**MOTOR CARS, Types, Standard-Triumph TR4**

'If car: Stuart Bladon tries a rally Triumph TR4.

Autocar, 119 (25 Oct 63) p.831-2. il.

Improving the performance of popular cars: Lawrence Tune

Triumph TR4. Autocar, 118 (22 Mar 63) p.504. il.

Standard's Sports Triumph. Engineering, 195 (22 Feb 63) p.277. il.

**MOTOR CARS, Types, Standard-Triumph Vitesse, Road tests**

Autocar road test 1909: Triumph Vitesse 1,596 c.c.

Autocar, 118 (18 Jan 63) p.98-102. il.

**MOTOR CARS, Types, Stutz DV32, Sports Saloon**

1932 Stutz DV32 Sports Saloon. Autocar, 119 (5 Jul 63) p.20-1. il. ref.

**MOTOR CARS, Types, Sunbeam Alpine Series 3**

Sunbeam Alpine Series III Sports Tourer and G.T. Autocar, 118 (15 Mar 63) p.434-5. il.

Sunbeam Alpine 3: two new versions—a Sports Tourer & G.T. Motor, 123 (20 Mar 63) p.235-6. il.

**MOTOR CARS, Types, Sunbeam Alpine Series 3 GT, Road tests**

Autocar road test 1941: Sunbeam Alpine G.T. series 3

1,592 c.c. Autocar, 119 (20 Sep 63) p.516-20. il.

**MOTOR CARS, Types, Sunbeam Alpine Series 3 Sports Tourer, Road tests**

Road test no.37/63: Sunbeam Alpine (Series III) Sports

Tourer. Motor, 124 (25 Sep 63) p.50-3. il.

**MOTOR CARS, Types, Sunbeam Rapier Series 4**

Sharpening the Rapier. Motor, 124 (16 Oct 63) p.208-9. il.

Sunbeam Rapier series IV. Autocar, 119 (18 Oct 63) p.775-6. il.

**MOTOR CARS, Types, Sunbeam Venezia**

Venezia: a sunbeam for the Italians. Autocar, 119 (13 Sep 63) p.493-4. il.

**MOTOR CARS, Types, Tatra**

Eric Dymock makes a Czech on Tatras and Skodas. E.

Dymock. Motor, 123 (20 Mar 63) p.237-40. il.

**MOTOR CARS, Types, Trojan Saloon, Road tests**

Were those the days? pt.2: 1934 12h.p. Mercedes-Benz

130H & 1931 10h.p. Trojan Saloon. Autocar, 118 (12

Apr 63) p.620-2. il. refs.

**MOTOR CARS, Types, Vauxhall**

Vauxhall changes. Autocar, 119 (13 Sep 63) p.462-3. il.

**MOTOR CARS, Types, Vauxhall Cresta, Road tests**

Autocar road test 1908: Vauxhall Cresta Hydra-Matic

2,651 c.c. Autocar, 118 (11 Jan 63) p.58-62. il.

Extended road test No. 1/63: Vauxhall Cresta. Motor, 122 (2 Jan 63) p.856-60. il.

**MOTOR CARS, Types, Vauxhall VX 4-90, Conversions**

Lawrence Tune Vauxhall VX 4/90. Autocar, 118 (25 Jan 63) p.168-9. il.

**MOTOR CARS, Types, Vauxhall VX 4-90, Road tests**

Decoke de-luxe. Motor, 122 (9 Jan 63) p.886. il.

**MOTOR CARS, Types, Vauxhall Victor**

12,000 miles in a series FB Vauxhall Victor. E. G.

Coushion. Motor, 124 (11 Sep 63) p.55-8. il.

**MOTOR CARS, Types, Vauxhall Victor de luxe, Road tests**

Extended road test no.46/63: Vauxhall Victor de luxe.

Motor, 124 (4 Dec 63) p.48-52. il.

**MOTOR CARS, Types, Vauxhall Viva**

New 1-litre car. Engineer, 216 (27 Sep 63) p.497-9. il.

Vauxhall Viva. Autocar, 119 (27 Sep 63) p.i-vi, 567. il.

Vauxhall Viva. Motor, 124 (2 Oct 63) p.83+. il.

Vauxhall Viva engineering. Engineering, 196 (27 Sep 63) p.387. il.

**MOTOR CARS, Types, Vauxhall Viva de luxe, Road tests**

Extended road test no.40/3: Vauxhall Viva de luxe. Motor, 124 (23 Oct 63) p.84-9. il.

Road test 1946: Vauxhall Viva de luxe 1,057 c.c.

Autocar, 119 (25 Oct 63) p.813-17. il.

**MOTOR CARS, Types, Volkswagen 1200, Road tests**

Extended road test No.13/63: Volkswagen 1200. Motor, 123 (3 Apr 63) p.60-4. il.

**MOTOR CARS, Types, Wolseley Hornet**

Bigger engine for Wolseley Hornet and Riley Elf. Autocar, 118 (22 Mar 63) p.505. il.

**MOTOR CARS, Types, Wolseley Hornet, Road tests**

Autocar road test 1936: Wolseley Hornet 998 c.c. Autocar, 119 (16 Aug 63) p.282-6. il.

**MOTOR CARS, Tyres**

Contact vital. E. Dymock. Motor, 124 (21 Aug 63)

p.45-8. il.

Tyres for comfort and safety. P. D. Patterson. Rubber & Plastics Age, 44 (Feb 63) p.150-2. il. refs.

**MOTOR CARS, Tyres, Road adhesion**

Just like the ivy. G. Howard. Autocar, 118 (1 Feb 63) p.194-6. il.

**MOTOR CARS, Upholstery, Cleaning**

Upholstery cleaners. Motor, 124 (13 Nov 63) p.55+. il.

**MOTOR CARS, Upholstery, Latex foam**

Physical properties of latex foam upholstery. G. H. Smith. Rubber & Plastics Age, 44 (Feb 63) p.148-9. il.

**MOTOR CARS, Ventilation**

- Heating and ventilation of passenger cars (summary) D. W. Copley. *Motor Body*, 131 (Jan 63) p.20+.
- Heating, ventilating & air-conditioning system of the automobile passenger compartment. *Modern Refrigeration*, 65 (Dec 62) p.1130-2. il.
- Integration of heating, ventilation and refrigeration into vehicle design. D. W. Copley. *Instn. of Mechanical Engrs. Proc. of Auto Division*, no.5 (1961/62) p.197-219. il.

**MOTOR CARS, Wheels, Alignment**

- Caught off-balance. G. Howard. *Autocar*, 118 (28 Jun 63) p.1116-18. il.

**MOTOR CARS, Wheels, Hubs, Assembly**

- Mechanized assembly of wheel hubs and brake drums for motor cars [Kearney & Trecker] A. J. Barker. *Machinery*, 103 (14 Aug 63) p.340-6. il. ref.

**MOTOR CARS, Windows**

- Windows on winter: special lamps: maintaining clear wind-screens: throw-up of mud and salt. *Autocar*, 119 (20 Sep 63) p.521-5. il.

**MOTOR CARS, Windscreens, Safety**

- Safety glass—what the law requires. B. Duxbury. *Autocar*, 118 (15 Mar 63) p.442-3. il. ref.

**MOTOR CARS, Winter equipment**

- Cars and cold, pt.1: oil. Pt.2: some winter fittings. Pt.3: thermostats. Pt.4: fans. Pt.5: batteries and ignition. *Autocar*, 119 (22 Nov 63) p.996+. il.
- Winter accessories. *Motor*, 124 (13 Nov 63) p.27-30. il.
- Winter equipment pt.2: coggling the show—and spiking the ice. *Autocar*, 119 (15 Nov 63) p.962-3. il.

**MOTOR CARS, Workshops, Architecture**

- Volkswagen workshops, Unna, Westphalia. *Architectural Design*, 33 (Jun 63) p.283. il.

**MOTOR COACHES**

- Coaching review, pt.2: brighter year for coachbuilders. *Transport World* (Feb 63) p.25+. il.
- Last minute thought! *Passenger Transport*, 126 (Jan 63) p.11+. il.
- March of progress in p.s.v. design. P. M. A. Thomas. *Bus & Coach*, 35 (Nov 63) p.416-18. il.

**MOTOR COACHES, Air conditioning**

- Passenger comfort: air conditioning. *Bus & Coach*, 35 (Jun 63) p.223-7. il.

**MOTOR COACHES, Bodies**

- British coach for Tripoli show. *Transport World* (Feb 63) p.47. il.
- Industrial designer looks at coaches. N. Chapman. *Bus & Coach*, 35 (Aug 63) p.298-302. il.
- Strachans and Austin co-operate. *Passenger Transport*, 126 (Mar 63) p.149-50. il.

**MOTOR COACHES, Bodies, Buyers' guides**

- Buyers' guide to coach bodywork: standardized touring coachwork available in Britain. *Commercial Motor*, 118 (4 Oct 63) p.84+. il.

**MOTOR COACHES, Bodies, Maintenance**

- Simple body repairs. P. M. A. Thomas. *Bus & Coach*, 35 (Aug 63) p.295+. il.

**MOTOR COACHES, Bodies, Plastics, Reinforced-Glass fibre**

- Reinforced plastics in road passenger transport. *Brit Plastics*, 36 (Oct 63) p.554-7. il.

**MOTOR COACHES, Chassis**

- A.E.C. Reliance 590. W. R. Taylor. *Passenger Transport*, 126 (Apr 63) p.204+. il.
- Britain's lowest-priced 36-footer yet [Thames 36] J. F. Moon. *Commercial Motor*, 118 (4 Oct 63) p.81-3. il.
- British passenger chassis: buyers' guide to types manufactured in this country. *Commercial Motor*, 118 (4 Oct 63) p.104-6. il.
- Coaching review, pt.6: road test-II the Bedford VAL. J. H. Fielder. *Transport World* (Feb 63) p.39-41. il.

**MOTOR COACHES, Chassis—cont.**

- Economic 36—footer by Ford. J. H. Fielder. *Transport World* (Oct 63) p.28+. il.
- Long "Leopard" has merits for coaching or service work. *Transport J.*, 20 (12 Apr 63) p.350-2. il.
- New low price Ford chassis. *Passenger Transport*, 126 (Dec 63) p.672+. il.
- 36 ft. A.E.C. Reliance 590. J. H. Fielder. *Transport World* (Dec 62) p.33-4. il.
- Viking has appeal. J. F. Moon. *Commercial Motor*, 118 (8 Nov 63) p.109-12. il.

**MOTOR COACHES, Cleaning**

- Cleaning equipment and materials. *Bus & Coach*, 35 (Apr 63) p.133-45. il.

**MOTOR COACHES, Double deck, Design**

- Fresh thoughts on design. *Commercial Motor*, 117 (12 Jul 63) p.67. il.

**MOTOR COACHES, Interior design**

- Passenger comfort: decor. *Bus & coach*, 35 (Jun 63) p.220-2. il.

**MOTOR COACHES, Maintenance**

- It's Greyhound for coach travel in the United States and Canada, pt.3: policy for maintenance improvements means lower costs. *Transport J.*, 21 (11 Oct 63) p.387+. il.

**MOTOR COACHES, Operation**

- Express fares: a 10 per cent supplement would make for significant improvements in service. P. Duncan. *Bus & Coach*, 35 (Dec 63) p.476-9. il.
- Now is the time to spring-clean those excursion licences. P. Grunay. *Bus & Coach*, 35 (Apr 63) p.130-2. il.
- Still more operators, still more p.s.v.s. W. Lambden. *Bus & Coach*, 35 (Sep 63) p.323-6. il. ref.
- Through non-stop services can pay off. W. Coombs. *Bus & Coach*, 35 (Jan 63) p.2-5. il.

**MOTOR COACHES, Operation, Hampshire**

- No gimmicks, just service. R. C. Carpenter. *Bus & Coach*, 35 (Jul 63) p.274-7. il.

**MOTOR COACHES, Operation, Night**

- Night working does pay. W. Coombs. *Bus & Coach*, 35 (Jul 63) p.246-8. il.

**MOTOR COACHES, Operation, North America**

- It's Greyhound for coach travel in the United States and Canada. *Transport J.*, 21 (9 Aug 63) p.126-8. il.
- "Personality" drivers are the aim of Greyhound management. *Transport J.*, 21 (Sep 63) p.222-4. il.

**MOTOR COACHES, Painting**

- Coachpainting. J. H. Ousbey. *Motor Body*, 131 (Feb 63) p.37-8.

**MOTOR COACHES, Performance**

- Performance of British buses and coaches. *Bus & Coach*, 35 (20 Nov 63) p.445-51.

**MOTOR COACHES, Performance, Motorways**

- Design and operation of motorway coaches. J. Pearson. *Instn. of Mechanical Engrs. Proc. of Auto. Division*, no.7 (1961/2) p.271-92. il.

**MOTOR COACHES, Replacement**

- Changing a 34-strong fleet yearly. J. R. Southgate. *Bus & Coach*, 35 (Sep 63) p.340-3. il.
- When to sell and how. P. Cawston. *Bus & Coach*, 35 (Sep 63) p.344-5. il.

**MOTOR COACHES, Seats**

- Passenger comfort: seating. D. F. Roberts. *Bus & Coach*, 35 (Jun 63) p.214-19. il.

**MOTOR COACHES, Stations, London**

- Clever adaptation of awkward site at King's Cross. *Passenger Transport*, 126 (Aug 63) p.434+. il.

**MOTOR COACHES, Structures, Integral**

- Integral construction saves 1,000 lb. [Verheul buses and coaches] P. A. C. Brockington. *Commercial Motor*, 117 (15 Feb 63) p.62-3. il.

**MOTOR COACHES, Tours**

- Extended tours by motor coach (extracts) E. L. Taylor. *Passenger Transport*, 126 (Apr 63) p.208-9.



**MOTOR COACHES, Transport**

Do express coach services need new standards? If these trips were typical, standards need improving. H. B. Cortee.—Northern facilities could be better. J. Hopkins.—Operators have problems but solutions must be found. F. K. Moses. *Commercial Motor*, 118 (1 Nov 63) p.58-61. il.  
1960/1980: will this happen in p.s.v. operation. *Transport J.*, 20 (12 Apr 63) p.334-5

**MOTOR COACHES, Types, Bedford-Duple Vega Major**

Bedford twin-steer coach gives impressive performance [“Vega Major”] *Transport J.*, 20 (8 Mar 63) p.238-40. il.

**MOTOR COACHES, Types, Bedford-Duple Vega Major, Road tests**

Bedford Val with Duple Vega Major body. W. R. Taylor. *Passenger Transport*, 126 (May 63) p.277-8. il.  
Sleek, safe and sure-footed. J. F. Moon. *Commercial Motor*, 117 (22 Feb 63) p.52-5. il.

**MOTOR COACHES, Types, Leyland Leopard-Duple**

This Leopard purrs! Road test: Leyland Leopard-Duple 49-seat coach. A. A. Townsin. *Commercial Motor*, 117 (10 May 63) p.46+. il.

**MOTOR COACHES, Types, Leyland-Plaxton**

New Leyland-Plaxton luxury coaches for Wallace Arnold. *Motor Body*, 131 (Apr 63) p.20-1. il.

**MOTOR COACHES, Types, Victory-Jonckheere, Road tests**

Entente cordiale—road test: Guy Victory-Jonckheere 46-seat coach. A. A. Townsin. *Commercial Motor*, 116 (28 Dec 62) p.40-3. il.

**MOTOR CYCLES**

Lower and lighter. P. Fraser. *Motor Cycle*, 110 (31 Jan 63) p.148-9. il.  
Super smoothie. D. Dixon. *Motor Cycle*, 111 (4 Jul 63) p.10-12. il.  
Your armchair show: first sitting all the up-to-two-fifties for 1964. *Motor Cycle*, 111 (14 Nov 63) p.578-87. il.

**MOTOR CYCLES—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Buyers' guides**Technical activities**Manufactures**Tests**Road tests**Maintenance**Riding**Riders**Parts**Transmissions**Steering assemblies**Wheels**Tyres**Engines**Carburettors**Electrical equipment**Magnetos**Lamps**Horns**Types**Racing**Ancillaries**Sidecars***MOTOR CYCLES, Buyers' guides**

Buyers' guide: at-a-glance specifications. *Motor Cycling* (13 Nov 63) p.14-16. il.

**MOTOR CYCLES, Carburettors**

Gilding the Goldie: service shop-lore no.12. *Motor Cycle*, 111 (28 Nov 63) p.660-30. il.

**MOTOR CYCLES, Effect on traffic flow, Signals, Traffic, Roads. See ROADS, Traffic, Signals, Traffic flow, Effect of motor cycles****MOTOR CYCLES, Engines**

Beefier singles: recast engines for AJS and Matchless three-fifties and five-hundreds. *Motor Cycle*, 111 (3 Oct 63) p.420-2. il.

This won't vibrate. G. H. Jones. *Motor Cycle*, 110 (28 Feb 63) p.256-7. il. ref.

Two-storey double-knocker side-valve. B. Currie. *Motor Cycle*, 110 (7 Feb 63) p.164-5. il. ref.

Villiers Starmaker. B. Currie. *Motor Cycle*, 110 (21 Feb 63) p.238-42. il.

**MOTOR CYCLES, Engines, Aluminium**

Geared for quantity production—Villiers' new Starmaker engine. *Light Metals*, 26 (Apr 63) p.46-7. il.

**MOTOR CYCLES, Engines, Cylinders, Piston rings**

Oversize piston rings not the cure. A. Jefferies. *Motor Cycle*, 110 (3 Jan 63) p.5. il.

**MOTOR CYCLES, Engines, Flywheels, Centrifugal burst testing**

Flywheels get centrifugal burst test. *Metalworking Production*, 107 (8 May 63) p.59-60. il.

**MOTOR CYCLES, Engines, Ignition**

Watch that gap. B. Currie. *Motor Cycle*, 111 (22 Aug 63) p.216-19. il.

**MOTOR CYCLES, Engines, Ignition, Timing**

Timing the small Norton twins. *Motor Cycle*, 111 (24 Oct 63) p.490-2. il.

**MOTOR CYCLES, Engines, Lubrication**

What next?: longer and longer stretch the oil-change intervals. *Motor Cycle*, 111 (26 Sep 63) p.374-5. il.

**MOTOR CYCLES, Engines, Maintenance**

Gilding the Goldie, pt.2: more Star tips. *Motor Cycle*, 111 (5 Dec 63) p.684-6. il.

**MOTOR CYCLES, Engines, Two-stroke**

Euclid trumped. *Motor Cycle*, 110 (3 Jan 63) p.8-9. il.  
Four-cylinder supercharged two-stroke unit. R. Cook. *Motor Cycling* (9 Jan 63) p.8-9. il.

**MOTOR CYCLES, Engines, Valves, Rotary**

Alpha rotary-valve unit. *Motor Cycle*, 111 (19 Dec 63) p.752-3. il. ref.

**MOTOR CYCLES, Horns**

Horns: market survey. J. Ebbrell. *Motor Cycle*, 111 (11 Jul 63) p.36-9. il.

**MOTOR CYCLES, Lamps**

About blinking time. K. Nicholls. *Motor Cycle*, 111 (7 Nov 63) p.558-9. il.

**MOTOR CYCLES, Magnetos, Flywheels, Testing**

Testing magneto flywheels at speeds up to 25,000 r.p.m. [Starmaker] *Machinery*, 103 (24 Jul 63) p.184-5. il.

**MOTOR CYCLES, Maintenance**

Check off for a spring clean. *Motor Cycling* (27 Mar 63) p.18. il.

Service-shop lore, no.4: light Stars stable—B.S.A. C15 and B40 singles. *Motor Cycle*, 110 (14 Mar 63) p.320-2. il.

Service-shop lore no.5: single simplicity. *Motor Cycle*, 110 (28 Mar 63) p.394-6. il.

Service shop lore no.6: Triumph six-fifties. *Motor Cycle*, 110 (18 Apr 63) p.472-4. il.

Service-shop lore no.7: one nine nines, James and Francis-Barnett lightweight with A.M.C. engines. *Motor Cycle*, 110 (2 May 63) p.546-8. il.

**MOTOR CYCLES, Maintenance, Tools**

Building your own workshop: twistgrip and spanners. J. Ebbrell. *Motor Cycle*, 110 (24 Jan 63) p.114-15. il.



**MOTOR CYCLES, Manufactures**

Japanese production methods, pt.6: making Honda motor-cycles. R. E. Green. *Machinery*, 102 (13 Feb 63) p.344-57. il.

Japanese production methods, pt.7: making Honda motor-cycles. R. E. Green. *Machinery*, 102 (20 Feb 63) p.423-32. il.

Japanese production methods, pt.8: making Honda motor-cycles. R. E. Green. *Machinery*, 102 (27 Feb 63) p.456-68. il. refs.

**MOTOR CYCLES, Parts, Die casting**

Japanese production methods, pt.12: die casting components for Honda motor cycles. R. E. Green. *Machinery*, 102 (27 Mar 63) p.719-25. il. refs.

**MOTOR CYCLES, Parts, Heat treatment, Quenching, Furnaces, Gas-fired**

Heat treating motor-cycle parts. *Metal Treatment*, 30 (Apr 63) p.171. il.

Vertical heat treatment. *Mass Production*, 39 (May 63) p.84-5. il.

**MOTOR CYCLES (Racing)**

All shapes and sizes: what I rode: no.3. D. Dixon. *Motor Cycle*, 110 (17 Jan 63) p.78-80. il.

Big John—some solo. V. Willoughby. *Motor Cycle*, 111 (29 Aug 63) p.242-5. il.

Blowers and gobblers. V. Willoughby. *Motor Cycle*, 110 (3 Jan 63) p.2-4. il.

Jindivik. V. Willoughby. *Motor Cycle*, 111 (26 Sep 63) p.372-4. il.

No longer a dream. D. Dixon. *Motor Cycle*, 111 (14 Nov 63) p.590-2. il.

TT technicalities, pt.2: frames, brakes and 'chairs'. P. Irving. *Motor Cycling* (3 Jul 63) p.8-9. il.

T.T. technical review, pt.2: more speed to come. V. Willoughby. *Motor Cycle*, 111 (4 Jul 63) p.2-5. il.

Test-tube specials (contd.) K. Sprayson. *Motor Cycle*, 110 (31 Jan 63) p.146-7. il.

**MOTOR CYCLES (Racing) Engines**

Four-strokes on the run. V. Willoughby. *Motor Cycle*, 110 (27 Jun 63) p.806-9. il.

Power torque revs. V. Willoughby. *Motor Cycle*, 110 (30 May 63) p.652-5. il.

TT technicalities, pt.1: power units on parade. P. Irving. *Motor Cycling* (26 Jun 63) p.8-9. il.

**MOTOR CYCLES (Racing) Engines, Two-stroke**

How the two-stroke wizards get 220 bhp/litre. P. Irving. *Motor Cycling* (31 Jul 63) p.8-9. il.

125 cc EMC Twin. P. Irving. *Motor Cycling* (12 Jun 63) p.7. il.

Technical topics: phenomenal two-strokes. *Autocar*, 119 (19 Jul 63) p.113. il.

**MOTOR CYCLES (Racing) Engines, Valves, Cam-closing**

Brierley's bell-crank. V. Willoughby. *Motor Cycle*, 111 (12 Sep 63) p.334-5. il.

**MOTOR CYCLES (Racing) Frames**

Irons for the Duke, pt.2: the Reynolds racing-frames story. K. Sprayson. *Motor Cycle*, 110. (24 Jan 63) p.102-4. il.

Specials for the specialist. K. Sprayson. *Motor Cycle*, 110 (17 Jan 63) p.72-4. il.

**MOTOR CYCLES (Racing) Gearboxes**

Six cogs for British racers: Schafleitner conversion. P. Irving. *Motor Cycling* (4 Sep 63) p.9. il.

**MOTOR CYCLES, Riders, Boots**

Boots. J. Ebbrell. *Motor Cycle*, 111 (17 Oct 63) p.464-7. il.

**MOTOR CYCLES, Riders, Gloves**

Riding gloves. J. Ebbrell. *Motor Cycle*, 111 (14 Nov 63) p.600-3. il.

**MOTOR CYCLES, Riders, Gloves, Electrically heated**

Twistgrip and spanners: cure for icy fingers. J. Ebbrell. *Motor Cycle*, 110 (7 Feb 63) p.166-7. il.

**MOTOR CYCLES, Riding, Night, Dazzle sensitivity**

Dazzle. H. Louis. *Motor Cycle*, 110 (21 Feb 63) p.222-3. il.

**MOTOR CYCLES, Riding, Snow conditions**

Twistgrip and spanners: it's a freeze up. J. Ebbrell. *Motor Cycle*, 110 (3 Jan 63) p.18-19. il.

**MOTOR CYCLES, Riding, Wet weather**

Happy as a duck. D. Dixon. *Motor Cycle*, 111 (21 Nov 63) p.636-9. il.

**MOTOR CYCLES, Road tests**

Tester's year. B. Main-Smith. *Motor Cycling* (9 Jan 63) p.7. il.

Tester's year, pt.2. B. Osborne. *Motor Cycling* (16 Jan 63) p.10+. il.

**MOTOR CYCLES, Sidecars**

More comfortable Monza: Watsonians for 1964: improvements: two Swallows included. *Motor Cycle*, 111 (24 Oct 63) p.510-12. il.

Outfit to worship. V. Willoughby. *Motor Cycle*, 111 (5 Dec 63) p.692-4. il.

646 cc BSA 'Rocket Gold Star' and Watsonian 'Monza'. *Motor Cycling* (13 Mar 63) p.6-7. il.

**MOTOR CYCLES, Sidecars, Driving**

Boss of the outfit. V. Willoughby. *Motor Cycle*, 111 (1 Aug 63) p.130-1. il.

**MOTOR CYCLES, Sidecars, Heaters**

Fan man wins: blower-driven device takes first prize in competition. J. Ebbrell. *Motor Cycle*, 111 (31 Oct 63) p.542-4. il.

**MOTOR CYCLES, Sidecars, Road tests**

645 c.c. Panther 120 and Canterbury 'Carmobile'. *Motor Cycling* (10 Apr 63) p.9. il.

Thunderbird and Avon: road tests of new models. *Motor Cycle*, 110 (13 Jun 63) p.746-8. il.

**MOTOR CYCLES, Steering assemblies, Hub-centre**

By the centre. V. Willoughby. *Motor Cycle*, 111 (15 Aug 63) p.186-8. il.

**MOTOR CYCLES, Transmissions, Overdrives**

Who's for overdrive? *Motor Cycling*, 110 (14 Mar 63) p.315. il.

**MOTOR CYCLES, Types, A.J.S.**

Redesigned engines from AMC. *Motor Cycling* (2 Oct 63) p.7. il.

**MOTOR CYCLES, Types, A.J.S. Hurricane, Road tests**

646 c.c. A.J.S. Hurricane. *Motor Cycle*, 110. (21 Mar 63) p.345-7. il.

**MOTOR CYCLES, Types, A.J.S. 7R**

Breeding a winner, pt.1. V. Willoughby. *Motor Cycle*, 110 (7 Mar 63) p.284-6. il.

Squeezing out the last ounce, pt.2. V. Willoughby. *Motor Cycle*, 110 (14 Mar 63) p.334-6. il.

**MOTOR CYCLES, Types, Ariel**

Service shop lore no.1: 247 c.c. Ariel two-stroke twins. *Motor Cycle*, 110 (31 Jan 63) p.136-8. il.

**MOTOR CYCLES, Types, Ariel Leader, Road tests**

247 cc Ariel 'Leader'. *Motor Cycling* (7 Aug 63) p.7. il.

**MOTOR CYCLES, Types, Ariel Pixie**

Ariel's 'Pixie' is coming off the line. *Motor Cycling* (6 Nov 63) p.5. il.

Pixie ultra-light fifty now in production progress. *Motor Cycle*, 111 (7 Nov 63) p.570-3. il.

**MOTOR CYCLES, Types, B.M.W. R50, Road tests**

Road test of new models: R50 BMW 494 cc Twin. *Motor Cycle*, 111 (19 Sep 63) p.343-5. il.

**MOTOR CYCLES, Types, B.S.A.**

Same—but different. P. Fraser. *Motor Cycle*, 111 (12 Dec 63) p.708-10. il.

**MOTOR CYCLES, Types, B.S.A. A10 Rocket Gold Star, Road tests**

646 cc BSA 'Rocket Gold Star' and Watsonian 'Monza'. *Motor Cycling* (13 Mar 63) p.6-7. il.

**MOTOR CYCLES, Types, B.S.A. A65 Star, Road tests**

Road tests of new models: 654 c.c. B.S.A. A65 Star.  
Motor Cycle, 111 (11 Jul 63) p.32-4. il.

**MOTOR CYCLES, Types, B.S.A. Beagle**

BSA's ultra-light challenger 75cc "Beagle" in production after hush-hush endurance test. Motor Cycling (23 Oct 63) p.7. il.

Beagle joins the hunt. Motor Cycle, 111 (24 Oct 63) p.500-3. il.

**MOTOR CYCLES, Types, B.S.A. Satellite**

Canadian draggin' B.S.A. Twin. Motor Cycle, 110 (28 Feb 63) p.253. il.

**MOTOR CYCLES, Types, B.S.A. Shooting Star**

1960 B.S.A. 497 c.c. Shooting Star. Motor Cycle, 110 (14 Feb 62) p.211. il.

**MOTOR CYCLES, Types, Brough Superior SS100**

Very superior. D. Dixon. Motor Cycle, 111 (3 Oct 63) p.403-5. il.

**MOTOR CYCLES, Types, Bultaco Metralla, Road tests**

Road tests of new models: 196 c.c. Bultaco Metralla.  
Motor Cycle, 110 (18 Apr 63) p.470-1. il.

**MOTOR CYCLES, Types, Capriolo**

Italian trialster-impression of 124 c.c. Rickman-modified Capriolo. P. Fraser. Motor Cycle, 110 (3 Jan 63) p.26-7. il.

**MOTOR CYCLES, Types, Cotton "Trials 250 special"**

Cotton 'trials 250 special'. Motor Cycling (2 Jan 63) p.10+. il.

**MOTOR CYCLES, Types, Csepel Pannonia, Road tests**

250cc Csepel 'Pannonia'. Motor Cycling (3 Jul 63) p.5. il.

**MOTOR CYCLES, Types, D.M.W. Ambassador**

Ambassador-D.M.W. redesign. Motor Cycle, 111 (4 Jul 63) p.18-19. il.  
Duplex-frame scrambler. Motor Cycle, 111 (7 Nov 63) p.554-5. il.

**MOTOR CYCLES, Types, Ducati Daytona**

249 cc Ducati Daytona. Motor Cycling (24 Jul 63) p.5. il.

**MOTOR CYCLES, Types, Francis-Barnett**

Return of the Plover. Motor Cycle, 111 (12 Sep 63) p.332-3. il.

**MOTOR CYCLES, Types, Francis Barnett Sports Fulmar, Road tests**

149 c.c. Francis Barnett Sports Fulmar. Motor Cycle, 111 (8 Aug 63) p.156-7. il.

**MOTOR CYCLES, Types, Gilera**

Those fabulous fours. M. Woollett. Motor Cycling (6 Feb 63) p.8+. il.

Those fabulous fours, pt.2: latest designs. M. Woollett.  
Motor Cycling (13 Feb 63) p.8-9. il.

**MOTOR CYCLES, Types, Gilera Jubilee**

175 cc Gilera 'Jubilee' lightweight. Motor Cycling (16 Jan 63) p.4-5. il.

**MOTOR CYCLES, Types, Greeves Essex Twin, Road tests**

Greeves 25DD 'Essex Twin'. Motor Cycling (24 Apr 63) p.8-9. il.

Road tests of new models: Greeves Essex Twin. Motor Cycle, 110 (4 Apr 63) p.404-6. il.

**MOTOR CYCLES, Types, Greeves 24MDS, Road tests**

No-holds-barred scrambler tests, pt.2: the 246 cc Greeves 24MDS. T. Gibbes. Motor Cycling (6 Mar 63) p.5. il.

**MOTOR CYCLES, Types, Guzzi Lodola, Road tests**

1964 road tests: the 235cc Guzzi Lodola. Motor Cycling (4 Dec 63) p.10. il.

**MOTOR CYCLES, Types, Honda CB77 Super Sport**

305 c.c. Honda Super Sport. Motor Cycle, 111 (25 Jul 63) p.94-6. il.

**MOTOR CYCLES, Types, Honda CB 77 Super Sport, Road tests**

350cc Honda 'Super Sport'. Motor Cycling (8 May 63) p.7. il.

**MOTOR CYCLES, Types, Honda CB 92, Road tests**

Road tests of new models: Honda CB 92 124cc. Motor Cycle, 111 (21 Nov 63) p.628-9. il.

**MOTOR CYCLES, Types, Husqvarna 250 Special**

Not for novices! T. Gibbes. Motor Cycling (16 Oct 63) p.5. il.

**MOTOR CYCLES, Types, James**

Eightsome. Motor Cycle, 111 (12 Sep 63) p.326-7. il.

**MOTOR CYCLES, Types, MZ ES150**

One of the best. V. Willoughby. Motor Cycle, 111 (22 Aug 63) p.226-7. il.

**MOTOR CYCLES, Types, Matchless**

Redesigned engines from AMC. Motor Cycling (2 Oct 63) p.7. il.

**MOTOR CYCLES, Types, Matchless G80CS "Marksman"**

No-holds-barred scrambler tests, no.1: 498 cc Matchless G80CS 'Marksman'. T. Gibbes. Motor Cycling (27 Feb 63) p.3. il.

**MOTOR CYCLES, Types, Matchless 'Monitor Super Sports', Road tests**

Matchless 250 c.c. 'Monitor Super Sports'. Motor Cycling (13 Feb 63) p.6-7. il.

**MOTOR CYCLES, Types, Norton**

All twins. Motor Cycle, 111 (26 Sep 63) p.376-7. il.  
More potent single-knocker for Archer. Motor Cycle, 110 (28 Feb 63) p.252. il.

**MOTOR CYCLES, Types, Norton 'Electra 400'**

Norton 'Electra 400' with electric starting. Motor Cycling (30 Jan 63) p.3. il.

Yanks demand buttons. Motor Cycle, 110 (31 Jan 63) p.126-7. il.

**MOTOR CYCLES, Types, Norton, Jubilee, Road tests**

249 c.c.: Norton Jubilee. Motor Cycle, 111 (4 Jul 63) p.6-7. il.

**MOTOR CYCLES, Types, Norton "Navigator", Road tests**

350cc Norton 'Navigator'. Motor Cycling (26 Jun 63) p.7. il.

**MOTOR CYCLES, Types, Panther 120, Road tests**

645 c.c. Panther 120 and Canterbury 'Carmobile'. Motor Cycling (10 Apr 63) p.9. il.

**MOTOR CYCLES, Types, Puch SVS, Road tests**

Austrian 175 c.c. split-single Puch SVS: road tests. Motor Cycling (20 Mar 63) p.6-7. il.

**MOTOR CYCLES, Types, Royal Enfield**

Enfield go Villers. Motor Cycle, 111 (17 Oct 63) p.458-60. il.

**MOTOR CYCLES, Types, Royal Enfield "Continental"**

1963 road tests: 250 cc five speed Royal Enfield 'Continental'. Motor Cycling (6 Mar 63) p.6-7. il.

**MOTOR CYCLES, Types, Royal Enfield Turbo Twin, Road tests**

Road tests of new models: Royal Enfield 249 cc Turbo Twin. Motor Cycle, 111 (28 Nov 63) p.670-1. il.

**MOTOR CYCLES, Types, Scorpions**

Enter Scorpions: new concern launches spine-frame comp jobs. Motor Cycling (6 Mar 63) p.3. il.

**MOTOR CYCLES, Types, Suzuki**

Suzuki survey. Motor Cycle, 111 (10 Oct 63) p.432-3. il.

**MOTOR CYCLES, Types, Suzuki K10**

Suzuki 80 cc K10. M. Evans. Motor Cycle, 111 (14 Nov 63) p.598-9. il.

**MOTOR CYCLES, Types, Suzuki RM 62**

Suzuki RM62. Motor Cycling (10 Apr 63) p.10-11. il.

**MOTOR CYCLES, Types, Suzuki T10, Road tests**

Road tests of new models: Suzuki 246 cc T10 twin. Motor Cycle, 111 (17 Oct 63) p.462-3. il.

**MOTOR CYCLES, Types, Triumph**

New fork for Triumph twins. Motor Cycle, 111 (31 Oct 63) p.531-4. il.

New forks and 12 volts from Triumph. Motor Cycling (30 Oct 63) p.5. il.

**MOTOR CYCLES, Types, Triumph Sports Cub, Road tests**

199 c.c. Triumph Sports Cub. Motor Cycle, 110 (3 Jan 63) p.16-17. il.

**MOTOR CYCLES, Types, Triumph Thunderbird, Road tests**

Triumph Thunderbird 649 c.c. Motor Cycle, 111 (15 Aug 63) p.190-2. il.

**MOTOR CYCLES, Types, Triumph Tiger 90, Road tests**

348 c.c. Triumph Tiger 90. Motor Cycle, 110 (23 May 63) p.644-6. il.

**MOTOR CYCLES, Types, Velocette**

Vogues, Vipers, Venoms. Motor Cycle, 111 (26 Sep 63) p.392-4. il.

**MOTOR CYCLES, Types, Velocette Vogue**

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**MOTOR CYCLES, Types, Yamaha YA5**

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**MOTOR CYCLES, Types, Yamaha YA5, Road tests**

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**MOTOR CYCLES, Types, Yamaha YDS2 "250 Sports", Road tests**

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Tyres: how to get them off, how to get them on and how to keep them on. M. Evans. Motor Cycle, 111 (5 Dec 63) p.680-3. il.

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**MOTOR CYCLISTS. See MOTOR CYCLES, Riders****MOTOR FUEL. See PETROL****MOTOR SHIPS. See SHIPS (Motor)****MOTOR VEHICLES**

Ford engineer looks ahead (summary) V. G. Raviolo. Passenger Transport, 126 (Sep 63) p.503

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**MOTOR VEHICLES**

Related Headings:

AMBULANCES

JEEPS

MOTOR CARS

MOTOR COACHES

MOTOR CYCLES

SCOOTERS

VANS

VEHICLES, Commercial

**MOTOR VEHICLES—SUBHEADINGS—Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

**History****Problems**

*Breakdown*

*Noise*

*Vibrations*

*Wheel hop*

**Properties**

*Dimensions*

*Weight*

**Technical activities**

*Design*

*Engineering*

*Manufactures*

*Factories*

*Servicing*

*Driving*

**MOTOR VEHICLES—SUBHEADINGS—Synopsis—cont.****Parts**

Chassis

Suspensions

*Shock absorbers*

Transmissions

Gearboxes

Gears

Rear axles

Steering wheels

Brakes

Wheels

Tyres

Bodies

Colour

Trim

Engines

*Diesel engines*

*Gas turbines*

*Exhaust*

Electrical equipment

Starters

Lamps

*Headlights*

Electronic systems

Windscreens

**Accessories**

Safety belts

**Performance**

*Acceleration*

*Deceleration*

*Braking*

*Steering*

**Types**

*Abandoned*

*Articulated*

*Tractor-trailer combinations*

*Steam*

*Refrigerated*

*Security*

*Lunar*

**Ancillaries**

*Trailers*

*Service stations*

**MOTOR VEHICLES, Abandoned**

Problems of vehicles abandoned on the highway.

Surveyor, 122 (16 Nov 63) p.1441-2. il.

**MOTOR VEHICLES, Acceleration, Stability**

Vehicle accelerations, pt.1: the horizontal forces that act between the road and a vehicle during acceleration and braking. G. Francia. Automobile Engr., 53 (Aug 63) p.361-7. ref.

Vehicle accelerations: the horizontal forces that act between the road and a vehicle during acceleration and braking, pt.2: development of calculations. G. Francia. Automobile Engr., 53 (Sep 63) p.407-12. il.

**MOTOR VEHICLES, Articulated**

Economics of articulation. Commercial Motor, 118 (13 Sep 63) p.56+

Where artic have cut empty running to a minimum. E. M. G. Gibbins. Commercial Vehicles, 36 (Feb 63) p.34-5. il.

**MOTOR VEHICLES, Articulated, Driving**

Teaching the art of articulated vehicle driving. Commercial Vehicles, 36 (Jan 63) p.52+. il.



**MOTOR VEHICLES, Articulated, Driving, Icy conditions**

Artics on ice. P. A. C. Brockington. *Commercial Motor*, 117 (8 Feb 63) p.50

**MOTOR VEHICLES, Articulated, Semi-trailers**

Articulated vehicles speed the load. Machinery Lloyd (Overseas ed.) 35 (5 Jan 63) p.26-9. il.

Continental run demonstrates improved braking on Traders.

B. R. Mathews. *Commercial Vehicles*, 37 (Jul 63) p.71  
18-ton articulated trailer [Austin/Pitt] *Mechanical Handling*, 50 (Feb 63) p.94. il.

Export trailers and semi-trailers. A. J. P. Wilding. *Commercial Motor*, 117 (3 May 63) p.156-8. il.

Ninety-six-wheel trailer for road transportation. *Engineer*, 216 (25 Oct 63) p.692-4. il.

Staking a reputation on articulated vehicle operation. G. D. Jewell. *Commercial Vehicles*, 37 (Jun 63) p.34-6. il.

Technical aspects of the semi-trailer. *Transport J.*, 21 (12 Jul 63) p.48+. il.

Weight saving with semi-trailers. *Commercial Vehicles*, 36 (Jan 63) p.44. il.

**MOTOR VEHICLES, Articulated, Semi-trailers, Bodies**

Designing special purpose bodies for semi-trailer operation. *Motor Body*, 132 (Aug 63) p.10-12. il.

Specialized bodywork for semi-trailers. *Transport J.*, 21 (12 Jul 63) p.54+. il.

**MOTOR VEHICLES, Articulated, Semi-trailers, Buyers' guides**

Buyers' guide: manufacturers of British trailers and semi-trailers. *Commercial Motor*, 118 (6 Sep 63) p.81+. il.

**MOTOR VEHICLES, Articulated, Semi-trailers, Standards**

Why vehicle weights and dimensions should be revised. T. A. F. Pollard. *Transport J.*, 21 (9 Aug 63) p.148-9. il.

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Minimum of handling, the outstanding merit of this artic shuttle service. *Commercial Vehicles*, 37 (Sep 63) p.38-9. il.

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Pitt all-align semi trailer: a new four-wheel semi-trailer that has an unusual suspension system. *Automobile Engr.*, 53 (Sep 63) p.406. il.

**MOTOR VEHICLES, Articulated, Semi-trailers, Suspensions, Pneumatic**

Air suspension beats deck cracking problem and speeds up turn-round. G. D. Jewell. *Commercial Vehicles*, 37 (Sep 63) p.59. il.

**MOTOR VEHICLES, Articulated, Stability**

Stability of articulated units. *Commercial Motor*, 118 (6 Sep 63) p.94-8

**MOTOR VEHICLES, Articulated, Tractive units**

Badger tractor is first of new lighter Leylands. *Commercial Vehicles*, 37 (Aug 63) p.43+. il.

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British tractive units for 15 to 18 tons g.t.w. [market survey] *Commercial Motor*, 118 (6 Sep 63) p.101+. il.

Dodge produces 24-ton tractive unit and 20-ton six-wheeler [D.310 & T.310] J. F. Moon. *Commercial Motor*, 118 (8 Nov 63) p.101-3. il.

Easy to handle, this Pax V artic. B. R. Mathews. *Commercial Vehicles*, 37 (Aug 63) p.49-52. il.

Leyland Badger. *Commercial Motor*, 117 (28 Jun 63) p.64-5. il.

Lightweight tractor from Leyland [Badger] *Transport World* (Jul 63) p.15-16. il.

**MOTOR VEHICLES, Articulated, Transport, Molten aluminium alloys. See ALUMINIUM, Alloys, Molten, Transport, Articulated motor vehicles****MOTOR VEHICLES, Articulated, Turning**

Tractor and semi-trailer handling: directional stability and control of a tractor and semi-trailer combination in a flat turn. F. Jindra. *Automobile Engr.*, 53 (Oct 63) p.438-46. il. refs.

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First-class performer, this A.E.C.-Scammell artic. *Transport J.*, 21 (9 Aug 63) p.140-1. il.

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A.E.C. Mandator tractor: a highly refined heavy-duty prime mover well matched with a Scammell air-sprung tandem-axle trailer for 24-ton gross loading. J. H. Fielder. *Transport World* (Aug 63) p.15-16. il.

Mandator makes its mark. J. F. Moon. *Commercial Motor*, 117 (26 Jul 63) p.48-51. il.

Plenty of power in reserve with the A.E.C. Mark V Mandator. B. R. Mathews. *Commercial Vehicles*, 37 (Sep 63) p.45-8.

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Small-engined big vehicle. J. F. Moon. *Commercial Motor*, 118 (22 Nov 63) p.48+. il.

**MOTOR VEHICLES, Articulated, Types, E.R.F. 64GX3-Highway 1602R, Road tests**

Lighter and better. J. F. Moon. *Commercial Motor*, 118 (25 Oct 63) p.38+. il.

**MOTOR VEHICLES, Articulated, Types, Ford Thames Trader-York DW2, Road tests**

Mark II Thames Trader copes well with 15 tons gross. B. R. Mathews. *Commercial Vehicles*, 36 (Jan 63) p.33-6. il.

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Badger sets new economy record. J. F. Moon. *Commercial Motor*, 118 (6 Sep 63) p.110-13. il.

**MOTOR VEHICLES, Articulated, Types, Seddon, Road tests**

Maximum traction—maximum articulation. Road test: Seddon 24-ton-gross eight wheeler. J. F. Moon. *Commercial Motor*, 117 (17 May 63) p.52-5. il.

**MOTOR VEHICLES, Bodies**

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**MOTOR VEHICLES, Bodies, Aluminium**

Aluminium and aluminium alloys. G. F. Moseley. *Motor Body*, 131 (Feb 63) p.36-7

**MOTOR VEHICLES, Bodies, Aluminium alloys**

Aluminium alloys for bodybuilding. G. F. Moseley. *Motor Body*, 132 (Aug 63) p.30-1

**MOTOR VEHICLES, Bodies, Demountable, Aluminium**

Demountable bodies save vehicle loading time. *Time & Motion Study*, 12 (Jul 63) p.39+. il.

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14-pump battery for vehicle dewaxing and washing. Pumping, 5 (Oct 63) p.566-7. il.

**MOTOR VEHICLES, Bodies, Insulation**

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**MOTOR VEHICLES, Bodies, Maintenance**

Equipping a body repairing shop. S. F. Page. *Commercial Vehicles*, 37 (Mar 63) p.79+. il.

**MOTOR VEHICLES, Bodies, Manufactures**

Body engineering for production. W. S. Attwood. *Motor Body*, 132 (Aug 63) p.14-19. il.

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Paintshop heating systems. J. H. Ousbey. *Motor Body*, 131 (Jan 63) p.14-15. il.

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Two Thermobloc units aid paint spraying and aluminium storage at Arlington Motor Company, Ltd. Oil Firing, 5 (Jan 63) p.32-3. il.

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Influence of modern tooling on body design (Summary) L. W. James & D. W. Allsop. *Automotive Body Engng.*, 132 (Nov 63) p.26-9. il.

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Particle board for automotive bodywork. *Automotive Body Engng.*, 132 (Nov 63) p.20-1. il.

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Reinforced plastics as a material for motor bodywork. A. C. Hill. *Reinforced Plastics*, 8 (Nov 63) p.83-6. il.

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Reinforced plastics can save money for manufacturers. S. N. Loud. *Automotive Body Engng.*, 132 (Nov 63) p.24-5. il.

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Plywood makes a come-back in the motor trade. S. F. Page. *Woodworking Industry*, 20 (Jun 63) p.319-20. il.

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New plastic repair technique [Acrulite] *Motor Body*, 131 (Jan 63) p.24-5. il.

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14-pump battery for vehicle dewaxing and washing. Pumping, 5 (Oct 63) p.566-7. il.

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Contribution of wood products to vehicle building. *Motor Body*, 131 (Feb 63) p.12-16. il.

Wood is returning to favour as a body material. S. F. Page. *Commercial Vehicles*, 37 (Nov 63) p.62+. il.

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Steps to safer braking. *Commercial Vehicles*, 36 (Dec 62) p.70+. il.

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**MOTOR VEHICLES, Breakdown (Tunnels) Removal, Equipment**

Heavy recovery vehicle for the Dartford tunnel. *Mechanical Power*, 59 (Nov 63) p.317-18. il.

Vehicle removal plans for Dartford-Purfleet tunnel.

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Welding operations on lorry and trailer main frames. P. A. Sidders. *Machinery*, 102 (24 Apr 63) p.957-9. il.

**MOTOR VEHICLES, Cleansing, Roads. See ROADS, Cleansing, Vehicles****MOTOR VEHICLES, Colour, Safety**

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Eight-channel oscillograph for recording accelerations. I. B. Laker. *Electronic Engr.*, 35 (Jul 63) p.434-8. il.

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Exhaust smoke control. *Automobile Engr.*, 53 (Dec 63) p.507

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Economical flywheel production on numerically-controlled machines. A. Cechanowicz. *Machinery*, 103 (7 Aug 63) p.292-6. il.

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Overtaking driver. A. Crawford. Ergonomics, 6 (Apr 63) p.153-70. refs.

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Right or left or centre? W. F. Bradley. Autocar, 119 (12 Jul 63) p.56-7. il.

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**MOTOR VEHICLES, Engines**

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ROCKER ARMS

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Radio transmits piston clearance while engine runs.

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**MOTOR VEHICLES, Exhaust, Effect of engine temperature**  
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Visit to Fiat, Turin. *Contract J.*, 193 (13 Jun 63) p.819-20. il.

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**MOTOR YACHTS. See YACHTS, Motor****MOTORS, Air. See AIR MOTORS****MOTORS, Electric. See ELECTRIC MOTORS****MOTORS, Hydraulic. See HYDRAULIC MOTORS****MOTORS, Hydraulic control systems. See CONTROL SYSTEMS, Hydraulic, Motors****MOTORWAYS**

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86 miles of continuous motorway now open on M.6. *Contract J.*, 196 (21 Nov 63) p.325-8. il.

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DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH (New Zealand)

ELECTRIC POWER SYSTEMS, New Zealand

GAS, Natural, Kapuni

HYDROELECTRIC POWER STATIONS, Benmore

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LOCOMOTIVES, Diesel, New Zealand

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Europe's widest newsprint machine is equipped with SKF bearings. *Ball Bearing J.* (Jul 63) p.15-24. il.

**NEWSPRINT CARRYING SHIPS. See SHIPS, Newsprint carrying****NEWTOWN**

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**NICKEL, Additives, Gunmetal castings. See GUNMETAL, Castings, Additives, Nickel****NICKEL, Additives, Leaded gunmetals castings. See GUNMETAL, Castings, Leaded, Additives, Nickel****NICKEL, Aircraft components. See AIRCRAFT, Components, Nickel****NICKEL, Alloys**

Related Headings:

NIMOCAST PK24

NIMONIC ALLOYS

NIMONIC 75

NIMONIC 80A

NIMONIC 90

**NICKEL, Alloys, Blades, Gas turbines, Aircraft. See AIRCRAFT, Gas turbines, Blades, Nickel alloy****NICKEL, Alloys, Casting, Investment**

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NICKEL-CHROMIUM-BORON-SILICON, Protection, Moulds, Glass bottle manufactures. See BOTTLES, Glass, Manufactures, Moulds, Protection, Nickel-Chromium-Boron-Silicon

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NICKEL-COBALT-NIOBIUM. See COBALT-NICKEL-NIOBIUM

NICKEL-COBALT NUCLEAR REACTIONS. See NUCLEAR REACTIONS,  $^{58}\text{Ni}(n,p)^{58}\text{Co}$

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NICKEL-COPPER, Thermocouples, Temperature measurement, Glass substrates, Vacuum deposited films. See FILMS, Vacuum deposited, Substrates, Glass, Temperature measurement, Thermocouples, Copper-Nickel

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NICKEL-NIOBIUM-STEEL-CHROMIUM, Steam pipes. See STEAM, Pipes, Steel-Chromium-Nickel-Niobium

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NICKEL-STEEL, Tanks, Natural gas, Tankers, Ships. See TANKERS, Ships, Natural gas carrying, Tanks, Steel-Nickel

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NIGHT DRIVING, Motor cars. See MOTOR CARS, Driving,  
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NIGHT OPERATION, Motor coaches. See COACHES,  
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**NITROBENZENE-WATER, Solvents, Electrolytes, Distribution potentials**

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COLLOIDION

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NITROGEN, Determination, Nitrogen compounds. See

**NITROGEN COMPOUNDS**, Determination of nitrogen

NITROGEN, Determination, Petroleum. See

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NITROGEN, Liquid, Cold baths, Vapour input control, Pyrolytic deposition, Films. See **FILMS**, Pyrolytic deposition, Vapour input control, Cold baths, Liquid nitrogen

NITROGEN, Liquid, Freezing, Sample trapping, Gas chromatography. See **GAS CHROMATOGRAPHY**, Sample trapping, Freezing, Liquid nitrogen

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NITROGEN, Surface measurement. See **SURFACES**, Measurement, Nitrogen

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## NUCLEAR REACTORS

Related Headings:

SUB-CRITICAL ASSEMBLIES

## NUCLEAR REACTORS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Particular countries

Great Britain

Europe

France

Cadarache

Asia

Israel

Rehovot

North America

Canada

## NUCLEAR REACTORS—SUBHEADINGS—Synopsis—cont.

Problems

Safety

Industrial health

Fires

Wastes

Reactor physics

Simulators

Weighting functions

Neutrons

Neutron diffusion

Resonance absorption

Gamma radiation

Sub-critical reactivity

Operation

Stability

Temperature control

Sample irradiation

Components

Structures

Pressure vessels

Shielding

Pipes

Stand pipes

Machinery

Mechanical engineering

Mechanical handling

Control systems

Control rods

Instruments

Calorimeters

Cooling systems

Fuel elements

Fuels

Materials

Metallurgy

Non fissile materials

Graphite

Ceramics

Types of reactors

Mobile

By can, moderator or coolant material

Magnox

Boiling water

Pressurised water

Molten salt

Water moderated

Heavy water moderated

Organic moderated

Gas cooled

Helium cooled

Water cooled

Homogeneous

Fast

(Research)

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**NUCLEAR REACTORS, Cadarache**

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**ODOURS, Fish packaging plant.** See FISH, Packaging, Plant, Odours

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**OFF-PEAK HEATING, Exchanges, Automatic telephony.** See TELEPHONY, Automatic, Exchanges, Heating, Thermal storage

**OFF-PEAK HEATING, Houses.** See HOUSES, Heating, Thermal storage

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**OFF SHORE DRILLING**

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ALGINATES  
ALIPHATIC COMPOUNDS  
ALKALOIDS  
AMINES  
AZO COMPOUNDS  
BUTOXYL COMPOUNDS  
CARBOHYDRATES  
CARBOXYLIC ACIDS  
CYCLIC COMPOUNDS  
DIAZO COMPOUNDS  
DISULPHIDE GROUPS  
ESTERS  
FLUOROCARBONS

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HUMIC ACIDS

HYDROCARBONS

MONOMERS

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ORGANOBORON COMPOUNDS

ORGANOMETALLIC COMPOUNDS

ORGANOPHOSPHOROUS COMPOUNDS

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**P.V.C., Coated steel sheets.** See **SHEETS, Steel, Coated, P.V.C.**

**P.V.C., Coatings, Metals, Sheets.** See **SHEETS, Metals, Coatings, P.V.C.**



P.V.C., Coatings, Slotted steel sheets, Mounting, Control systems, Electric motors. See ELECTRIC MOTORS, Control systems, Mounting, Sheets, Steel, Slotted, Coatings, P.V.C.

P.V.C., Coatings, Steel. See STEEL, Coatings, P.V.C.  
P.V.C., Coatings, Steel, Sheets. See SHEETS, Steel, Coatings, P.V.C.

P.V.C., Coatings, Steel, Sheets, Housings, Instruments. See INSTRUMENTS, Housings, Sheets, Steel, P.V.C. coated

P.V.C., Coatings, Steel, Sheets, Structures. See STRUCTURES, Sheets, Steel, Coatings, P.V.C.

P.V.C., Coatings, Tinplate. See TINPLATE, Coatings, P.V.C.

P.V.C., Containers. See CONTAINERS, P.V.C.

P.V.C., Electrical conduits. See CONDUITS, Electrical, P.V.C.

#### P.V.C., Expanded

'Plasticell' BTR's expanded PVC. J. F. Hadwen. Rubber & Plastics Age, 44 (Aug 63) p.921+. il.

#### P.V.C., Extrusion

Melt extrusion properties of rigid PVC, pt.1. G. H. Burke & G. C. Portingell. Brit. Plastics, 36 (Apr 63) p.196-205. il.

Melt extrusion properties of rigid PVC, pt.2. G. H. Burke & G. C. Portingell. Brit. Plastics, 36 (May 63) p.254-8. il. refs.

P.V.C., Fabrics. See FABRICS, P.V.C.

P.V.C., Film. See FILM, P.V.C.

P.V.C., Film, Packaging, Ball bearings. See BEARINGS, Ball, Packaging, Film, P.V.C.

P.V.C., Film, Packaging, Roller bearings. See BEARINGS, Roller, Packaging, Film, P.V.C.

P.V.C., Footwear. See FOOTWEAR, P.V.C.

P.V.C., Industrial clothing. See CLOTHING, Industrial, P.V.C.

#### P.V.C., Molecular weights

Molecular weight characteristics of PVC. G. A. R. Matthews & R. B. Pearson. Plastics, 28 (May 63) p.98-9

#### P.V.C., Moulding, Dip

Dipmoulding. H. G. W. Pierson. International Plastics Engng., 3 (Jan 63) p.22-3. il.

#### P.V.C., Moulding, Injection

Injection moulding of unplasticized PVC compounds. B. Grieff & G. C. Portingell. Brit. Plastics, 36 (Jun 63) p.319-25. il. ref.

#### P.V.C., Packaging materials

Packaging applications of polyvinyl chloride. Packaging, 34 (Jun 63) p.50-2. il.

P.V.C., Padding, Foundation wear. See FOUNDATION WEAR, Padding, P.V.C.

#### P.V.C., Pigments, Titanium dioxide

Titanium pigments for polyvinyl chloride. G. S. Fulton. Applied Plastics, 6 (Jan 63) p.28+

P.V.C., Pipes. See PIPES, P.V.C.

P.V.C., Pipes, Chlorination, Water, Swimming baths. See SWIMMING BATHS, Water, Chlorination, Pipes, P.V.C.

P.V.C., Pipes, Disposal, Effluents. See EFFLUENTS, Disposal, Pipes, P.V.C.

#### P.V.C., Plasticisers

Plasticisers for PVC: a review of the past year. P. P. Hopt. Rubber & Plastics Age, 44 (Mar 63) p.254. il.

#### P.V.C., Plastisols, Temperature, Measurement, Gel blocks

Graded temperature gel block for evaluation of P.V.C. plastisols. A. Wheeler & B. V. Clifton. Brit. Plastics, 35 (Dec 62) p.640-1. il.

#### P.V.C., Production, Heating

Right heat at the right time. Rubber & Plastics Weekly, 145 (30 Nov 63) p.743+

P.V.C., Rainwater goods. See RAINWATER GOODS, P.V.C.

P.V.C., Sachets. See SACHETS, P.V.C.

P.V.C., Sacks. See SACKS, P.V.C.

P.V.C., Sacks, Packaging, Chemicals. See CHEMICALS, Packaging, Sacks, P.V.C.

P.V.C., Sheets. See SHEETS, P.V.C.

P.V.C., Soles, Footwear. See FOOTWEAR, Soles, P.V.C.

#### P.V.C., Stabilisation

PVC stabilisation. J. A. Rhys. Rubber & Plastics Age, 44 (Mar 63) p.261+. refs.

#### P.V.C., Stereochemistry, X-ray diffraction

Mesomorphic and crystalline states in polyvinyl chloride by x-ray diffraction. M. Marni & V. Nardi. Nature, 199 (20 Jul 63) p.247-9. il. refs.

#### P.V.C., Strength

Strength of plastics, pt.12: vinyl chloride polymers. P. I. Vincent. Plastics, 28 (Apr 63) p.120-2. il. refs.

P.V.C., Tiles, Floors. See FLOORS, Tiles, P.V.C.

#### PACCHYRRHIZUS EROSUS, Seed, Oil

Composition of *Pachyrrhizus erosus* (yam bean) seed oil.

T. H. Broadbent & O. Shore. J. of Science of Food & Agriculture, 14 (Jul 63) p.524-7. refs.

PACERS, Traffic, Roads. See ROADS, Traffic, Command speeds

#### PACHIRA AQUATICA, Seed, Fat, Gas-liquid chromatography

Preliminary examination of the fat from *Pachira aquatica*.

A. de Bruin, J. E. Heesterman & M. R. Mills. J. of Science of Food & Agriculture, 14 (Oct 63) p.758-60. refs.

PACIFIC OCEAN. See TELEPHONY, Cables, Pacific Ocean  
PACIFIC STATES, U.S.A.

See

ELECTRIC POWER SYSTEMS, U.S.A., Pacific States  
PACKAGE CONSIGNMENTS, Transport, Wood. See WOOD, Transport, Package consignments

PACKAGE DYEING, Cellulosic textiles, Hanks. See HANKS, Cellulosic textiles, Dyeing, Package

PACKAGE DYEING, Yarns. See YARNS, Dyeing, Package

PACKAGED BOILERS. See BOILERS, Packaged

PACKAGED BOILERS, Dairy industry. See DAIRY INDUSTRY, Boilers, Packaged

PACKAGED BOILERS, Heating, Textile manufactures. See TEXTILES, Manufactures, Heating, Boilers, Packaged

PACKAGED COAL. See COAL, Packaged

PACKAGED DEALS, Building. See BUILDING, Contracts, Packaged deals

PACKAGED ENGINES, Liquid fuelled meteorological rockets. See ROCKETS, Meteorology, Liquid fuelled, Engines, Packaged

#### PACKAGES, Contamination, Metals, Detectors

Metallic contamination retracting-band rejector [Automac] Packaging, 34 (Nov 63) p.88-9. il.

PACKAGES, Cotton yarns. See YARNS, Cotton, Packages

PACKAGES, Yarns. See YARNS, Packages

#### PACKAGING

Growth-rate of packaging outpaces rise in industrial output and in consumers' income: an eight-year statistical analysis. R. Mills. Packaging Rev., 83 (Nov 63) p.10+. il.

Packaging for transit and export. G. S. Bridge. Brit. Manufacturer, 47 (Aug 63) p.11-13. il.

#### PACKAGING

Related Headings:

ALUMINIUM, Packaging materials

BALING

BOTTLING

CANNING

CONTAINERS

FILM, P.V.C., Packaging materials

FILM, Plastics, Packaging materials

FILM, Polypropylene, Packaging materials

FILM, Polypropylene, Shrinkable, Packaging materials

FILM, Polystyrene, Packaging materials

FILM, Polythene, Packaging materials

FILM, Polythene, Ventilated, Packaging materials



**PACKAGING—cont.**

FILM, Shrinkable  
 LABELS  
 PLASTICS, Packaging materials  
 POLYSTYRENE, Expanded, Packaging materials  
 TINPLATE, Packaging materials

**PACKAGING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

**Plant & Equipment**

*Factories*  
*Machines*

**Processes**

*Testing*  
*Cushioning*  
*Sealing*  
*Labelling*

**Materials**

*Strapping*  
*Adhesives*  
*Glues, Animal*  
*Papers*

**Types of package**

*Cases*  
*Blister*  
*Barrier wrapping*  
*Vacuum*

**PACKAGING, Adhesives**

Adhesion and adhesives for the graphic industries. W. J. Opie & J. B. Halifax. *Printing Technology*, 7 (Jul 63) p.24-32. refs.

PACKAGING, Aerosols. See AEROSOLS, Packaging

PACKAGING, Air transport freight. See FREIGHT, Transport, Air, Packaging

PACKAGING, Bacon. See BACON, Packaging

PACKAGING, Ball bearings. See BEARINGS, Ball, Packaging

**PACKAGING, Barrier wrappings**

Sealing tapes and barriers. F. T. Day. *Canning & Packing*, 33 (Apr 63) p.11

PACKAGING, Beetroots. See BEETROOTS, Packaging

**PACKAGING, Blister**

High-output Blister packaging machines [Sealomatic] Packaging, 34 (Jun 63) p.68-70. il.

PACKAGING, Bricks. See BRICKS, Packaging

PACKAGING, Butter. See BUTTER, Packaging

PACKAGING, Carpets. See CARPETS, Packaging

**PACKAGING, Cases, Fibre board**

Fibreboard packing cases. F. T. Day. *Canning & Packing*, 33 (Oct 63) p.10-11

Solid fibreboard—papermakers' product for the tough jobs. J. Tavaré. *Paper & Print*, 36 (Autumn 63) p.263+. il.

**PACKAGING, Cases, Fibre board, Corrugated**

Tough packs to scotch losses through careless handling. F. T. Day. *Storage Handling Distribution*, 7 (Aug 63) p.34-5. il.

**PACKAGING, Cases, Fibre board, Testing**

Laboratory transit testing of fibreboard cases. W. D. Caldwell. *Packaging Rev.*, 83 (Aug 63) p.24+. il.

**PACKAGING, Cases, Wood, Manufactures**

Packing case manufacture is a specialised business. D. A. Jolley. *Woodworking Industry*, 20 (Jul 63) p.363-5. il.

PACKAGING, Chemicals. See CHEMICALS, Packaging

PACKAGING, Coffee. See COFFEE, Packaging

PACKAGING, Cosmetics. See COSMETICS, Packaging

**PACKAGING, Cushioning, Materials, Testing**

Test equipment for evaluating cushioning materials [Dunlop "Tripsometer"] *Packaging*, 34 (Apr 63) p.60+. il.

PACKAGING, Dairy industries. See DAIRY INDUSTRY, Packaging

PACKAGING, Drugs. See DRUGS, Packaging

PACKAGING, Eggs. See EGGS, Packaging

PACKAGING, Electrical equipment. See ELECTRICAL EQUIPMENT, Packaging

PACKAGING, Electronic components. See ELECTRONICS, Components, Packaging

PACKAGING, Export cargoes. See CARGOES, Export, Packaging

PACKAGING, Fabrics. See FABRICS, Packaging

**PACKAGING, Factories, Architecture**

Packaging factory near Monmouth [Tillotsons] *Industrial Architecture*, 6 (Oct 63) p.708-12. il.

PACKAGING, Fish. See FISH, Packaging

PACKAGING, Fittings, Lighting. See LIGHTING, Fittings, Packaging

PACKAGING, Food. See FOOD, Packaging

PACKAGING, Freeze-dried food. See FOOD, Freeze-dried, Packaging

PACKAGING, Freight. See FREIGHT, Packaging

PACKAGING, Frozen food. See FOOD, Frozen, Packaging

PACKAGING, Fruit. See FRUIT, Packaging

PACKAGING, Fruit storage. See FRUIT, Storage, Packaging

**PACKAGING, Glues, Animal**

Animal glue adhesives in packaging applications. W. B. Langston. *Packaging*, 34 (Aug 63) p.44-5

PACKAGING, Hair preparations. See HAIR PREPARATIONS, Packaging

**PACKAGING, Industry**

Present problems and future development of the packaging industry. G. L. Riddell. *World's Paper Trade Rev.*, 159 (6 Jun 63) p.1839+

PACKAGING, Insecticides. See INSECTICIDES, Packaging

PACKAGING, Iron. See IRON, Packaging

**PACKAGING, Labelling, Machines**

Labelling machines for containers of any shape. *Chemical Products & Aerosol News*, 26 (Feb 63) p.45. il.

PACKAGING, Machinery. See MACHINERY, Packaging

**PACKAGING, Machines**

Complete packaging plant in one unit: Baker Perkins model TSW 750 machine. *Packaging*, 34 (Feb 63) p.67. il.

Crank drive for reciprocating members requiring differential motions. J. A. Cuckson. *Machinery*, 102 (27 Mar 63) p.698-9. il.

Hassia—ten years of progress. *Packaging*, 34 (Mar 63) p.60+. il.

Packaging machinery by Thiele. *Packaging*, 34 (Nov 63) p.50-2. il.

Some holding devices for mechanical packaging. J. A. Cuckson. *Mechanical World*, 143 (Jun 63) p.246-8. il.

Some holding devices for mechanical packaging, pt.2. J. A. Cuckson. *Mechanical World*, 143 (Jul 63) p.300-2. il.

Some holding devices for mechanical packaging, pt.3. J. A. Cuckson. *Mechanical World*, 143 (Aug 63) p.346-8. il.

PACKAGING, Machines

Related Headings:

CASE PACKERS

**PACKAGING, Machines, Control systems**

Light, capacitance and sound: keys to packaging control. S. Hetherington. *Packaging Rev.*, 83 (May 63) p.28-31. il.

Speed control of packaging machinery. *Packaging*, 34 (Feb 63) p.75-7. il.

**PACKAGING, Machines, Electrical equipment**

How to choose and specify electric equipment for packaging machinery. *Packaging Rev.*, 83 (Sep 63) p.60-4. il.

**PACKAGING, Machines, Weighing heads**

Pneumatron weighing-heads. Packaging, 34 (Mar 63) p.91+. il.

**PACKAGING, Materials, Laminating**

New trends in laminating. Packaging, 34 (Feb 63) p.64-6. il.

**PACKAGING, Materials, Laminating, Lacquers**

Further developments in two-part laminants [EP & EPS "Kleber"]. Packaging, 34 (Apr 63) p.64-64b. il.

**PACKAGING, Materials, Laminating, Machines**

Laminating. Print in Britain, 11 (May 63) p.42-3. il.

**PACKAGING, Materials, Permeability, Determination**

Method for the determination of permeability in wrappings and packs. I. Varsányi. Packaging, 34 (Jun 63) p.94-6. il. refs.

**PACKAGING, Materials, Permeability (Water vapour) Rate, Measurement, Instruments**

New apparatus for measuring water-vapour transmission rates. H. J. Lellie. Packaging, 34 (Nov 63) p.82-5. il. refs.

**PACKAGING, Materials, Printing, Machines**

Letterpress: rotary packaging presses. W. R. Durrant. Brit. Printer, 76 (Oct 63) p.118+. il.

**PACKAGING, Materials, Printing, Thermography**

Thermography takes first steps into packaging. C. Bloy. Packaging Rev., 83 (Jan 63) p.42-4. il.

**PACKAGING, Materials, Strength, Testing, Machines**

'Instron' precision testing equipment. Packaging, 34 (Sep 63) p.160-2. il.

**PACKAGING, Meat. See MEAT, Packaging****PACKAGING, Motor car parts. See MOTOR CARS, Parts, Packaging****PACKAGING, Paint. See PAINT, Packaging****PACKAGING, Papers**

New packaging papers. F. T. Day. Canning & Packing, 33 (Sep 63) p.12-13

**PACKAGING, Papers, Finishing**

Spicers offer: multiform finishing and assembly service. Packaging, 34 (Jan 63) p.68D

**PACKAGING, Papers, Grease resistant**

Related Headings:  
GLASSINE

**PACKAGING, Papers, Metal-coated**

New metal-coated papers and boards. Packaging, 34 (Jan 63) p.65+. il.

**PACKAGING, Papers, Printing, Thermography**

'Thermographic' packaging papers. Packaging, 34 (May 63) p.70+. il.

**PACKAGING, Papers, Vinylidene chloride copolymer-coated**

Vinylidene chloride copolymer coated papers ["Carcofan"] Packaging, 34 (Apr 63) p.76-7

**PACKAGING, Perfumes. See PERFUMES, Packaging****PACKAGING, Photographic film. See FILM, Photographic, Packaging****PACKAGING, Pressure, Flavouring materials, Food. See FOOD, Flavouring materials, Packaging, Pressure****PACKAGING, Prunes. See PRUNES, Packaging****PACKAGING, Quick-frozen meat. See MEAT, Quick-frozen, Packaging****PACKAGING, Quick-frozen meat products. See MEAT, Products, Quick-frozen, Packaging****PACKAGING, Railway transport, Freight. See FREIGHT, Transport (Railways) Packaging****PACKAGING, Receivers, Television. See TELEVISION, Receivers, Packaging****PACKAGING, Road haulage. See ROADS, Haulage, Packaging****PACKAGING, Roller bearings. See BEARINGS, Roller, Packaging****PACKAGING, Roses. See ROSES, Packaging****PACKAGING, Sauerkraut. See SAUERKRAUT, Packaging****PACKAGING, Sealing, Tapes**

Sealing tapes and barriers. F. T. Day. Canning & Packing, 33 (Apr 63) p.11

**PACKAGING, Seamless stockings. See STOCKINGS, Seamless, Packaging****PACKAGING, Steel. See STEEL, Packaging****PACKAGING, Stockings. See STOCKINGS, Packaging****PACKAGING, Strapping, Steel, Manufactures**

Signode expand their manufacturing capacity [Magnus] Packaging, 34 (Nov 63) p.46-8. il.

**PACKAGING, Strapping, Tapes, Nylon**

'Dymax' strapping: new non-metallic strapping system introduced by Signode Ltd. Packaging, 34 (Sep 63) p.128-9. il.

**PACKAGING, Strapping, Tapes, Rayon**

High-tensacity rayon strapping ["Tensoband"] Packaging, 34 (Mar 63) p.75-6. il.

**PACKAGING, Tea. See TEA, Packaging****PACKAGING, Testing**

Packaging to specification [Agran] Packaging, 34 (Jul 63) p.70-2. il.

Videometric measurement of package impact. Packaging, 34 (Mar 63) p.51+. il.

**PACKAGING, Thermoplastic film. See FILM, Thermoplastics, Packaging****PACKAGING, Tubes, Toothpaste. See TOOTHPASTE, Tubes, Packaging****PACKAGING, Vacuum, Machines**

Fres-Co vacuum/gas packaging system. Packaging, 34 (Jun 63) p.86-9. il.

Fully-automatic vacuum-gas packaging machine [Paverma Sepa-Packer] Packaging, 34 (Sep 63) p.120-1. il.

**PACKAGING, Vegetables. See VEGETABLES, Packaging****PACKAGING, Waxes, Polishes. See POLISHES, Waxes, Packaging****PACKAGING, Wires. See WIRES, Packaging****PACKED BEDS, Furnaces, Melting. See MELTING, Furnaces, Packed beds****PACKED COLUMNS, Absorption, Acetone vapour. See ACETONE, Vapour, Absorption, Packed columns****PACKED COLUMNS, Absorption, Ammonia. See AMMONIA, Absorption, Packed columns****PACKED COLUMNS, Absorption, Gases. See GASES, Absorption, Packed columns****PACKED COLUMNS, Distillation. See DISTILLATION, Packed columns****PACKED COLUMNS, Liquid maldistribution**

Effect of maldistribution on the performance of packed columns. N. D. Changez & H. Sawistowski. Industrial Chemist, 39 (Apr 63) p.181-5. il. refs.

**PACKED COLUMNS, Liquid maldistribution, Wall effect**

Theoretical prediction of liquid distribution in a packed column with wall effect. K. E. Porter & M. C. Jones. Trans. of Instn. of Chemical Engrs., 41 (Jul/Aug 63) p.240-7. il. refs.

**PACKED TOWERS, Packing**

Tower packings. F. Molyneux. Mechanical World, 143 (Jun 63) p.239-41. il.

Tower packings, pt.2. F. Molyneux. Mechanical World, 143 (Jul 63) p.292-4. refs.

**PACKING, Cooling towers. See COOLING, Towers, Packing****PACKING, Packed towers. See PACKED TOWERS, Packing****PACKING, Printing. See PRINTING, Packing****PADDING, Casting, Steel. See STEEL, Casting, Padding****PADDING, Exothermic, Casting, Steel. See STEEL, Casting, Padding, Exothermic****PADDING, Foundation wear. See FOUNDATION WEAR, Padding****PADDING, Motor car parts. See MOTOR CARS, Parts, Padding****PADDINGTON**

See

FLATS, Paddington

**PADDLE WHEELS, Steam boats. See BOATS, Steam, Paddle wheels**

PADDY RICE. See RICE, Paddy  
PADS, Slipper. See SLIPPER BEARINGS

## PAINT

- Features of protective painting systems. H. W. Chatfield. Municipal J., 71 (31 May 63) p.1598-9. il.
- New paints examined, pt.14: 'Ultralux' Sparkling White. Paint J., 15 (Dec 62) p.296-7
- Paint for preventing and controlling corrosion. R. H. Chandler. Paint Technology, 27 (Aug 63) p.52-3
- Paintmakers match their products to the job. K. S. Flory. Municipal J., 71 (13 Dec 63) p.3882
- Report from the U.S.S.R. on progress in anti-corrosion paint formulas. Corrosion Prevention & Control, 10 (Feb 63) p.26. refs.
- Science of surface coatings. L. Valentine. Chemistry & Industry (30 Mar 63) p.523-5

## PAINT

- Related Headings:  
ANTI-FOULING COMPOSITIONS

## PAINT—SUBHEADING—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Particular countries  
U.S.A.

Research  
*Film applicators*

Defects  
*Failure*  
*Blistering*  
*Blooming*  
*Efflorescence*  
*Flaking*

Properties  
*Adhesion*  
*Viscosity*  
*Water absorption*  
*Porosity*  
*Durability*  
*Weathering*  
*Toxicity*  
*Microbiology*

Technical activities  
*Testing*  
*Microscopy*  
*Manufacture*  
*Mixing*  
*Application*  
*Workshops*  
*Brushes*  
*Spraying*  
*Drying*  
*Stoving*  
*Stripping*  
*Packaging*  
*Storage*

Materials  
*Soaps*  
*Vehicles*  
*Pigments*  
*Driers*  
*Stainers*

## PAINT

Related Headings—cont.

### Types

- By origin
  - Roman
- By property
  - (Stoving)
  - Water thinned
  - Fluorescent
  - Emulsion
  - Multi-colour
- By vehicle or pigment
  - Organic
    - Plastics
      - Polyether esters
      - Alkyd resin
      - Acrylic
      - P.V.C.
      - Polyurethane
      - Glycero-benzyllic resin
      - Chlorinated rubber

Inorganic  
Zinc  
Titanium dioxide

- By purpose
  - Fire retardant
  - Fungicidal

Ancillaries  
Pumps

PAINT, Acrylic, Coatings, Aluminium, Sheets. See SHEETS, Aluminium, Coatings, Paint, Acrylic

PAINT, Acrylic, Coatings, Steel, Sheets. See SHEETS, Steel, Coatings, Paint, Acrylic

## PAINT, Acrylic, Durability, Effect of plasticisers, Studies, Microscopy

Microscopical studies of paint film defects. J. A. Lindquist & W. J. Wirkus. J. of Oil & Colour Chemists' Ass., 46 (Nov 63) p.915-39. il. refs.

PAINT, Acrylic, Metals. See METALS, Paint, Acrylic

## PAINT, Acrylic, Thermosetting

Thermosetting acrylic resins. K. E. Piggott. J. of Oil & Colour Chemists' Ass., 46 (Dec 63) p.1009-26. refs.

## PAINT, Adhesion

Adhesion of paint films. T. R. Bullett. J. of Oil & Colour Chemists' Ass., 46 (Jun 63) p.441-59. il. refs.

## PAINT, Alkyd resins

New paints examines: no.15—Time-Saver Alkyd Enamel [Manders Paints, Ltd.] Paint J., 16 (Sep 63) p.379-80. il.

## PAINT, Alkyd resins, Modified, Acrylic

Vinyl and acrylic modified alkyds, pt.2. J. R. Fletcher, D. P. Kelly & D. H. Solomon. Oil & Colour Chemists' Ass. J., 46 (Feb 63) p.127-31. refs.

## PAINT, Alkyd resins, Modified, Lactic acid

Lactic acid modified alkyd resins. H. R. Touchin. Oil & Colour Chemists' Ass. J., 46 (Feb 63) p.118-26

## PAINT, Alkyd resins, Modified, Vinyl

Vinyl and acrylic modified alkyds, pt.2. J. R. Fletcher, D. P. Kelly & D. H. Solomon. Oil & Colour Chemists' Ass. J., 46 (Feb 63) p.127-31. refs.

PAINT, Alkyd resins, Motor cars. See MOTOR CARS, Paint, Alkyd resin

## PAINT, Alkyd resins, Talcs, Laminar

Fine particle-size laminar talc as a paint component [Mistran Vapour] H. R. Touchin. Paint Technology, 27 (Jun 63) p.32-4

PAINT, Aluminium houses. See HOUSES, Aluminium, Paint  
PAINT, Astronautics vehicles. See ASTRONAUTICS, Vehicles, Paint



**PAINT, Blistering**

Painters' problems: blistering. G. Old. *Painting & Decorating*, 83 (Dec 63) p.35-6. il.

**PAINT, Blooming**

Blooming and loss of gloss. G. Old. *Painting & Decorating*, 83 (Nov 63) p.33-4

**PAINT, Bodies, Motor cars.** See **MOTOR CARS, Bodies, Paint**

**PAINT, Bodies, Vans.** See **VANS, Bodies, Paint**

**PAINT, Boilers, Heating, Housing.** See **HOUSING, Heating, Boilers, Paint**

**PAINT, Brushes, Bristles, Nylon**

Unco-operative hog. Master Builder, 81 (Apr 63) p.80-1. il.

**PAINT, Buildings.** See **BUILDINGS, Paint**

**PAINT, Chlorinated rubber**

Chlorinated rubber for protection in depth. H. A. Slade. *Corrosion Prevention & Control*, 9 (Dec 62) p.37-8. il.

**PAINT, Driers**

Related Headings:  
HEXOGENE

**PAINT, Driers, Naphthenates**

Review of the metallic naphthenates including the rare earth driers. C. R. Chessman. *Paint Technology*, 27 (Oct 63) p.31-5

**PAINT, Drying, Gelation**

Extraction tests of film drying by chemical processes. R. Bult. *Paint Technology*, 27 (Aug 63) p.23-9. il.

**PAINT, Drying, Ovens, Gas-fired**

Paint drying: abstracts from "Town gas—a modern fuel for industry". E. S. Moule & K. Frost. *Gas World*, 158 (21 Sep 63) p.46-7. il.

**PAINT, Drying, Ovens, Gas-fired, Control systems**

Flame safeguard for paint drying ovens [Protectoglo] *Gas*, 26 (Sep 63) p.20-1. il.

**PAINT, Drying, Rheology, Studies, Ultrasonics**

Kinetic study of film drying via changes in mechanical properties. R. R. Myers & R. K. Schultz. *Paint Technology*, 27 (Nov 63) p.24-30. il. refs.

**PAINT, Drying, Stresses, Determination**

Performance of paint films as a function of application method. A. C. Filson & P. H. Jones. *J. of Oil & Colour Chemists' Ass.*, 46 (Oct 63) p.809-19. il. refs.

**PAINT, Drying, Studies, Spectroscopy, Infra-red**

Applications of infra-red spectroscopy to the study of the drying and yellowing of oil films (summary) L. A. O'Neill. *Paint Technology*, 27 (Jan 63) p.44-7. refs.

**PAINT, Drying cabinets, Clothing.** See **CLOTHING, Drying cabinets, Paint**

**PAINT, Durability**

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**PAINT, Durability, Effect of time-schedules**

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Special papers—in science, mechanics, electrics and fashion. *Paper & Print*, 36 (Summer 63) p.195-6

**PAPER**

Related Headings:

FLONG

WALLPAPERS

WRITING PAPER

**PAPER—SUBHEADINGS—Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

**Properties**

*Strength*

*Elasticity*

*Stress relaxation*

*Substance*

*Curl*

*Dimensional stability*

*Surfaces*

**Mills****Technical activities**

*Testing*

*Inspection*

*Conditioning*

*Converting*

*Coating*

*Sizing*

*Finishing*

*Cutting*

*Guillotines*

*Folding*

*Winding*

*Reels*

*Fluting*

*Ruling*

**Materials**

*Fibres*

*Waste*

**Types of paper**

*Coated*

*Oil impregnated*

*Esparte*

*Tissue*

*Kraft*

*Tracing*

PAPER, Anti-corrosive, Packaging, Iron. See IRON, Packaging, Paper, Anti-corrosive

PAPER, Anti-corrosive, Packaging, Steel. See STEEL, Packaging, Paper, Anti-corrosive

PAPER, Board. See BOARD, Paper

PAPER, Board, Boxes, Flowers. See FLOWERS, Boxes, Paper board

PAPER, Board, Cartons. See CARTONS, Paper board

PAPER, Board, Cartons, Frozen food. See FOOD, Frozen, Cartons, Paper board

PAPER, Board, Printing. See PRINTING, Board, Paper

PAPER, Cables. See CABLES, Electric, Paper

**PAPER, Coated, Effect of humidity**

Importance of relative air humidity for coated papers and board and its control during manufacture (abridged) M. Judt. *Paper Market* (Oct 63) p.12+. refs.

**PAPER, Coated, Hygrostability**

Hygrostability experiments. J. W. S. Allam. *Paper Technology*, 4 (Apr 63) p.142-8. il. refs.

**PAPER, Coating**

Bowaters adopt new paper coating process. *Paper Making & Paper Selling*, 82 (Mar/Apr 63) p.11-15. il.

Coated papers—a tremendous upsurge in mass-produced grades. R. C. Rose. *Paper & Print*, 36 (Summer 63) p.179+. il.

Lacquering and film laminations, pt.2: paper choice: high gloss varnishes for overprinting. F. T. Day. *World's Paper Trade Rev.*, 160 (1 Aug 63) p.375+. il.

**PAPER, Coating—cont.**

- Lacquering and film laminations, pt.3. F. T. Day. World's Paper Trade Rev., 160 (15 Aug 63) p.490+. il.
- Lacquering and film laminations, pt.4. F. T. Day. World's Paper Trade Rev., 160 (12 Sep 63) p.819+. il.
- Lacquering and film laminations, pt.5: an evaluation of lacquers & films. F. T. Day. World's Paper Trade Rev., 160 (10 Oct 63) p.1189-90.
- Lacquering and film laminations no.6: film applications—hot press for heat sealing. F. T. Day. World's Paper Trade Rev., 160 (7 Nov 63) p.1503-4. il.
- New coating plant for Bowaters. Paper & Print, 36 (Spring 1963) p.80. il.
- Trailing blade coating process at Sittingbourne. Brit. Printer, 76 (Apr 63) p.106-7. il. ref.

**PAPER, Coating, Adhesives**

- Gummed papers—a bright future, with ample production capacity to meet all demands. E. D. McLaurin. Paper & Print, 36 (Autumn 63) p.277+

**PAPER, Coating, China clay, Mechanical handling control systems**

- Handling paper coating materials: conveying and elevating equipment installed at the Witchampton paper mill. P. M. Sanders. Mechanical Handling, 50 (Sep 63) p.470-5. il.

**PAPER, Coating, Lacquer**

- Lacquering and film laminations, pt.1: surface coating for printed work. F. T. Day. World's Paper Trade Rev., 160 (11 Jul 63) p.107+. il.

**PAPER, Coating, Machines**

- Some new Trist inventions in coating and calendering. J. C. S. Buckley. World's Paper Trade Rev., 159 (11 Apr 63) p.1195+. il.

**PAPER, Coating, Machines, Bowled rolls**

- Bowled rolls in high speed coating. A. E. William. Paper & Print, 36 (Autumn 63) p.266-7. il.

**PAPER, Coating, Machines, Trailing blade**

- Bowaters instal trailing blade for webs of 160 ins. Paper Maker, 145 (Mar 63) p.53. il.
- Trailing blade coater in production at Bowaters' Sittingbourne. World's Paper Trade Rev., 159 (7 Mar 63) p.755+. il.

**PAPER, Coating, Machines, Trailing blade, Control systems**

- Coating paper continuously at 2,000 f.p.m. [Bowaters Sittingbourne mill] Electrical Times, 144 (29 Aug 63) p.293-8. il.

**PAPER, Coating, Polymers**

- Plastics coatings on paper substrates. J. R. Young. Plastics Inst. Trans. & J., 31 (Apr 63) p.37-42. il. refs.

**PAPER, Coating, Polyvinylidene chloride latex**

- Coating of paper with polyvinylidene chloride latex. J. P. Mulkern. Paper Technology, 4 (Apr 63) p.123+

**PAPER, Conditioning, Machines**

- New products, services and materials: paper conditioning machine. World's Paper Trade Rev., 159 (17 Jan 63) p.213+. il.

**PAPER, Conducting, Analogues, Stresses. See STRESSES, Analogues, Paper, Conducting****PAPER, Converting, Equipment, Manufactures**

- Black Clawson International Ltd. Paper Maker, 146 (Dec 63) p.69-70. il.
- Black Clawson to expand Woolwich plant. World's Paper Trade Rev., 160 (5 Dec 63) p.1886+. il.

**PAPER, Converting, Machines, Reciprocating movements, Crank drive**

- Crank drive with constant horizontal velocity. H. B. Schell. Machinery, 102 (1 May 63) p.1012-14. il.

**PAPER, Converting, Machines, Reel feeding**

- Reel-feeding: a fresh look at the facts. R. E. Gilliard. Brit. Printer, 76 (May 63) p.63+. ref.

**PAPER, Curl**

- Effect of machine variables on the curl of paper. I. F. Hendry & J. A. S. Newman. Paper Technology, 4 (Aug 63) p.381-8. il. refs.

**PAPER, Cutting, Dies, Manufactures**

- Dies for paper shaping. Paper & Print, 35 (Winter 62) p.443+. il.

**PAPER, Dimensional stability**

- Dimensional stability of paper—a survey. A. T. Franklin & C. M. Wilson. Printing Technology, 7 (Jul 63) p.40-55. refs.

**PAPER, Elasticity**

- Elasticity of paper: some further observations. O. J. Kallmes. Paper Technology, 4 (Oct 63) p.479-80. refs.

**PAPER, Esparto, Production, Cleaning**

- Cleaning stock for esparto papers. J. Buglass. Paper Technology, 3 (Dec 62) p.565-69. refs.

**PAPER, Fibres**

- Physics B section: relationship between fibre and paper properties. Relationship between fibre structure and properties. D. H. Page. What we are doing (Oct 63) p.25-6. il.

- Relationship between fibre and paper properties. D. H. Page. What we are doing (Jun 63) p.27-8

**PAPER, Fibres, Dimensional changes**

- Shrinkage and swelling of papermaking fibres. D. H. Page, P. A. Tydeman & I. Emery. What we are doing (Jun 63) p.8-13. il. refs.

**PAPER, Fibres, Microscopy, Specimens, Mounting**

- Permanent preparation of fibre specimens for microscopical examination. Paper Maker, 146 (Aug 63) p.56+
- Permanent preparation of fibre specimens for microscopical examination (contd.) S. M. Charlett. Paper Maker, 146 (Sep 63) p.73+. il.

**PAPER, Finishing**

- Fascinating techniques in papermaking, pt.5: finishing processes—supercalendering, cutting, inspection and packing. R. R. A. Higham. Paper & Print, 35 (Winter 62) p.393-5. il.

- Technical problems in the automatic finishing of paper. A. R. Perrin & W. S. Richardson. Paper Market (Dec 62) p.20-4. il.

**PAPER, Fluting, Tests, Standardisation**

- Standardisation of test methods for fluting papers [Concorn test] A. J. Crowther & R. Rosser. Paper Technology, 4 (Apr 63) p.153-6. refs.

**PAPER, Folding, Machines**

- Dux folding and collating system. Brit. Printer, 76 (Mar 63) p.96. il.

**PAPER, Guillotines**

- Horizontal cut on single-knife trimmer. Brit. Printer, 76 (Jan 63) p.84-5. il.

**PAPER, Industry**

- How one British paper-maker sees the markets of the sixties. G. Symes. Print in Britain, 11 (Jun 63) p.C6-8. il.

- Mill-merchant co-operation can provide better consumer service (extracts) G. B. C. Johnston. World's Paper Trade Rev., 159 (16 May 63) p.1607+

**PAPER, Industry, Great Britain**

- British paper industry. P. G. Walker. Paper & Print, 36 (Summer 63) p.135-6
- Papermakers—the British groupings. F. H. Norris. Paper & Print, 36 (Summer 63) p.137+
- Papermaking—who makes what. G. M. Lonsdale. Paper & Print, 36 (Summer 63) p.145+

**PAPER, Inspection**

- Fascinating techniques in papermaking, pt.5: finishing processes—supercalendering, cutting, inspection and packing. R. R. A. Higham. Paper & Print, 35 (Winter 62) p.393-5. il.

**PAPER, Inspection, Acceptance sampling**

- Acceptance sampling for visual defect quality control. W. J. Haselow. Paper Market (Apr 63) p.28-31. il. ref.



PAPER, Insulation, Cables, High voltage d.c. power transmission. See POWER TRANSMISSION, D.C., High voltage, Cables, Insulation, Paper

#### PAPER, Kraft, Manufacture

Munksund—modern Swedish kraft liner mill. *World's Paper Trade Rev.*, 159 (17 Jan 63) p.203+. il.

#### PAPER, Mills, Architecture

Factory at Petersfield. *Architects' J.*, 138 (23 Oct 63) p.857-66. il.

#### PAPER, Mills, Layout

Basic factors influencing the location and lay-out of pulp and paper mills. *J. Grant. World's Paper Trade Rev.*, 160 (8 Aug 63) p.431+. il.

#### PAPER, Oil impregnated, Insulation, Effect of water absorption

Behaviour of moist oil-impregnated paper under electric stress. *P. Kogan. Proc. of Instn. of Electrical Engrs.*, 110. (Dec 63) p.2257-66. il. refs.

Water in oil-impregnated-paper insulation: summary or 'Behaviour of moist oil-impregnated paper under electric stress'. *P. Kogan. J. of Instn. of Electrical Engrs.*, 9 (Dec 63) p.521-2. il.

PAPER, Packaging materials. See PACKAGING, Papers

PAPER, o-Phenylphenol impregnated, Packaging, Fruit storage. See FRUIT, Storage, Packaging, Paper, Impregnated, o-Phenylphenol

PAPER, Photogravure. See PHOTOGRAVURE, Paper

PAPER, Plastic laminates. See LAMINATES, Plastics, Papers

PAPER, Postage stamps. See POSTAGE STAMPS, Paper

PAPER, Printing. See PRINTING, Paper

PAPER, Printing, Adhesive labels. See LABELS, Adhesive, Printing, Paper

#### PAPER, Reels, Handling, Tables, Hydraulic

Lifting table handles unbalanced loads. *Measurement & Control*, 2 (Oct 63) p.397-8. il.

#### PAPER, Reels, Hoists

New hoist handles wider paper reels. *J. Buck. Mechanical Handling*, 50 (Dec 63) p.678-80. il.

PAPER, Resistive, Analogues, Fluid flow. See FLUIDS, Flow, Analogues, Paper, Resistive

#### PAPER, Ruling, Pens, Machines

Machine ruling: pen machines and pen making. *W. G. Evans. Brit. Printer*, 76 (Dec 63) p.110+. il.

PAPER, Sacks. See SACKS, Paper

#### PAPER, Sizing

Fascinating techniques in papermaking, pt.6: making the paper resistant to penetration by liquids. *R. R. A. Higham. Paper & Print*, 36 (Spring 1963) p.49+. il.

Treatment of paper and paperboard at the size press and at the calender (summary) *C. W. Converse. World's Paper Trade Rev.*, 159 (9 May 63) p.1532+. refs.

#### PAPER, Sizing, Sodium aluminate

Use of sodium aluminate for sizing and modern theories of the chemistry involved. *M. Chene. World's Paper Trade Rev.*, 159 (11 Apr 63) p.1179+. refs.

#### PAPER, Strength, Effect of drying shrinkage

Effects of drying shrinkage and fibre orientation on some physical properties of paper. *E. R. Gates & I. C. Kenworthy. Paper Technology*, 4 (Oct 63) p.485-94. il. refs.

#### PAPER, Strength, Effect of fibre orientation

Effects of drying shrinkage and fibre orientation on some physical properties of paper. *E. R. Gates & I. C. Kenworthy. Paper Technology*, 4 (Oct 63) p.485-94. il. refs.

#### PAPER, Stress relaxation

Stress relaxation and work hardening in paper. *B. D. Craven. Paper Maker, International no.* (1963) p.103-13. il. refs.

#### PAPER, Substance, Measurement, Transverse, Beta gauges

Transverse measurement of paper substance. *F. Church. Instrument Practice*, 17 (Sep 63) p.947-51. il.

#### PAPER, Surfaces, Effect of rolling

Surface structure of paper under rolling pressure. *B. Hsu. Brit. J. of Applied Physics*, 14 (May 63) p.301-6. il. refs.

PAPER, Tape, Data logging. See DATA LOGGING, Paper tape

PAPER, Tape, Input units, Computers. See COMPUTERS, Input units, Paper tape

#### PAPER, Testing

Section profiles: paper and board test development. What we are doing. (Oct 63) p.17-21. il.

#### PAPER, Testing, Glove boxes

PATRA glove box. *Brit. Ink Maker*, 6 (Nov 63) p.36. il.

#### PAPER, Tissue, Sterile, Production, Mechanical handling

Automation for tissues and fluids, pt.1. *D. M. Potter. Mechanical Handling*, 50 (Jul 63) p.356-65. il.

Automation for tissues and fluids, pt.2. *D. M. Potter. Mechanical Handling*, 50 (Aug 63) p.417-22. il.

PAPER, Tracing. See TRACING PAPER

#### PAPER, Waste, Adhesives, Synthetic

Synthetic adhesives on paper. *Public Cleansing*, 53 (Apr 63) p.180-1

PAPER, Waste, Paper board manufacture. See BOARD, Paper, Manufactures, Waste paper

#### PAPER, Waste, Pernicious contraries

B.W.P.U.C. reports progress on the 'pernicious contraries' problem. *World's Paper Trade Rev.*, 160 (19 Sep 63) p.974+

#### PAPER, Waste, Recovery, Fiberisers

High speed fiberisers. *S. Lammle. What We Are Doing* (Dec 62) p.24-32. il. refs.

PAPER, Web-offset lithography. See LITHOGRAPHY, Web-offset, Paper

PAPER CHROMATOGRAPHY, Aflatoxin determination, Groundnuts. See GROUNDNUTS, Determination of aflatoxin, Chromatography, Paper

PAPER CHROMATOGRAPHY, Cinnolines. See CINNOLINES, Chromatography, Paper

PAPER CHROMATOGRAPHY, Detergents. See DETERGENTS, Analysis, Chromatography, Paper

PAPER CHROMATOGRAPHY, Determination of heavy fuel, Dyeing, Straight-run gas oil. See GAS OIL, Straight-run, Dyeing, Heavy fuel, Determination, Chromatography, Paper

PAPER CHROMATOGRAPHY, Oils. See OILS, Chromatography, Paper

PAPER ELECTROPHORESIS, Protein. See PROTEIN, Electrophoresis, Paper

PAPER-PHENOLIC RESINS, Discs, Rotary vacuum filters, Cleaning plant, Coal. See COAL, Cleaning, Plant, Filters, Vacuum, Rotary, Discs, Paper-Phenolic resins

PAPER-PHENOLIC RESINS, Roller. See ROLLERS, Paper-Phenolic resins

#### PAPERMAKING

Anglo-Norge co-operation in pulp-paper integration. *Paper & Print*, 35 (Winter 62) p.415+. il.

Another milestone in British paper making history [Wiggins Teape pulp & paper mill, Corpach] *Paper Making & Paper Selling*, 82 (May/Jun 63) p.8+. il.

Clyde Paper Company spends £1 million on modernisation at Rutherglen. *World's Paper Trade Rev.*, 159 (28 Mar 63) p.1003+. il.

East Germany's paper industry expands. *World's Paper Trade Rev.*, 160 (29 Aug 63) p.672+. il.

Easton & Johnson build complete new paper mill plant at Maidenhead. *World's Paper Trade Rev.*, 159 (4 Apr 63) p.1102+. il.

Fiskeby open Europe's largest trimmed-width papermill. *Packaging*, 34 (Feb 63) p.54-5. il.

Fort William—a significant and ambitious project. *Paper & Print*, 36 (Summer 63) p.197

**PAPERMAKING—cont.**

- New look for Peter Dixon mills at Grimsby and Oughtibridge. *World's Paper Trade Rev.*, 159 (18 Apr 63) p.1263+
- Paper mill in South Wales. *Concrete & Constructional Engng.*, 58 (May 63) p.214-17. il.
- Print and paper relationship. A. T. Franklin. *World's Paper Trade Rev.*, 159 (27 Jun 63) p.2121+. il.
- Productivity in the Reed Paper Group. C. T. Gould. *Productivity*, 1 (Nov/Dec 62) p.17-24. il.
- Swedish King attends inauguration of huge Fiskeby expansion. *World's Paper Trade Rev.*, 159 (24 Jan 63) p.283+. il.
- Trends in paper manufacturing methods. A. G. Arend. *Paper Making & Paper Selling*, 81 (Nov-Dec 62) p.12-14
- W.P.M. modernisation at Darwen, Lancs. *World's Paper Trade Rev.*, 159 (13 Jun 63) p.1935+. il.

**PAPERMAKING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## History

1932-39.

## Particular localities

*Great Britain*

*Buckinghamshire*

*Northumberland*

*Fourstones*

*Ireland*

## Information services

*Libraries*

*Museums*

*Education*

*Research*

*Laboratories*

## Physics

*Chemistry*

*Moisture content*

## Problems

*Safety*

*Wet end breaks*

*Suction pick-up*

*Barring*

*Effluents*

## Equipment

*Machines*

*Valves*

*Presses*

*Boilers*

*Power plant*

*Instruments*

*Control systems*

## Technical activities

*Chemical engineering*

*Microscopy*

*Stock preparation*

*Comminution*

*Refining*

*Mixing*

*Mixers*

*Drying*

*Ventilation*

## Materials

*Raw materials*

**PAPERMAKING—SUBHEADINGS—Synopsis—cont.***Additives*

*Polymers, Synthetic*

*Amino Resins*

*Cereal xanthides*

*Man-made fibres*

*Fillers*

*Surface active agents*

*Felt*

**PAPERMAKING, 1932-39, Literature surveys**

- Notes sur le travail original publié par la Section Technique du "British Paper and Board Makers' Association" au cours des années 1932-1939 (summaries) *Paper Maker, International no.* (1963) p.75-7. refs.
- Zusammenfassende Betrachtungen über Veröffentlichungen, die von der technischen Sektion der B.P. & B.M.A. in den Jahren 1932 bis 1939 herausgegeben wurden. *Paper Maker, International no.* (1963) p.100-2. refs.

**PAPERMAKING, Additives**

- Research on the behaviour of papermaking additives. R. D. Isabell, D. J. B. Miller & J. G. McNaughton. *Paper Technology*, 4 (Apr 63) p.135-41. refs.

**PAPERMAKING, Additives, Control systems**

- Control of paper stock additives. F. Church. *Instrument Practice*, 17 (Oct 63) p.1071-4. il.

**PAPERMAKING, Additives, Testing**

- Evaluation of non-fibrous materials for papermaking. D. I. Smith & D. T. G. Muir. *Paper Technology*, 4 (Feb 63) p.35-42. il.

**PAPERMAKING, Amino resins**

- Amino resins as wet strengthening agents for the treatment of paper. R. F. Hill. *Paper Technology*, 4 (Feb 63) p.43-8. il. refs.

**PAPERMAKING, Barring, Calender stack**

- Calender stack barring. B. I. Howe. *Paper Technology*, 4 (Aug 63) p.365-6. refs.

**PAPERMAKING, Boilers, Coal-fired**

- Power for paper-making. *Engng. & Boiler House Rev.*, 78 (May 63) p.170-2. il.

**PAPERMAKING, Boilers, Feedwater, Ion exchange**

- Selection and design of an automatic demineralisation plant [Permutit Co. for Reed Paper Group] A. B. Watts. *Engng. & Boiler House Rev.*, 78 (Oct 63) p.370-4. il.

**PAPERMAKING, Buckinghamshire**

- New light on two early Buckinghamshire paper mills [Coltnett Mills Wraybury, & Horton Mill] J. G. Jenkins. *Paper Maker*, 146 (Nov 63) p.76-8. refs.

**PAPERMAKING, Calenders, Crowns, Controls**

- Controlling crowns on machine calenders [Black Clawson Accra-Nip controlled calender] B. J. Koziol. *World's Paper Trade Rev.*, 160 (25 Jul 63) p.278+. il.

**PAPERMAKING, Cereal xanthides**

- Cereal derivatives add strength to paper. *Paper Making & Paper Selling*, 82 (Jul/Aug 63) p.8

**PAPERMAKING, Chemical engineering**

- Section profiles: Chemical engineering. J. Luckins. *What we are doing* (Oct 63) p.12-16. il.

**PAPERMAKING, Chemistry, Research**

- Section profiles: Physical Chemistry. *What we are doing* (Jun 63) p.22-6. il.

**PAPERMAKING, Comminution, Machines**

- Developments of a specific wet disintegrating machine for the paper industry. K. Rosenfeld, G. Mickley & H. Goos. *World's Paper Trade Rev.*, 159 (16 May 63) p.1617+. il. refs.

- Recent advances in the application of high-speed wet defibrators in stock preparation systems [Deflaker E-I-M-. E-I] K. Rosenfeld & G. Mickley. *Paper Maker*, 146 (Nov 63) p.62+. il. refs.

**PAPERMAKING, Control systems, Computers**

Application of digital control computers to the pulp and paper industry. G. H. Laycock. *Process Control & Automation*, 10 (May 63) p.189-94. il. ref.

On-line computer control of paper manufacture. G. H. Laycock & W. T. Lee. *Paper Technology*, 4 (Oct 63) p.501-8. il.

**PAPERMAKING, Control systems, Pneumatic**

Pneumatic instrumentation and automatic control of a pulp and paper mill. *Instrument & Control Engng.* (Aug 63) p.10-12. il.

**PAPERMAKING, Drying**

Introduction: the wider aspects of drying by heat. W. A. Gilmour. *Paper Technology*, 4 (Jun 63) p.233-4

Theoretical benefits from new methods of drying. J. Luckins. *Paper Technology*, 4 (Jun 63) p.245-50. il. refs.

**PAPERMAKING, Drying, Cylinders, Hoods, Accelerator**

Drying paper on cylinders with accelerator hoods—principles and practice. M. D. Jepson. *Paper Technology*, 4 (Jun 63) p.268-74. il. refs.

**PAPERMAKING, Drying, Cylinders, Iron, Cast**

Thermal conditions in a steam drying cylinder. R. Hoyle. *Paper Technology*, 4 (Jun 63) p.258-67. il.

**PAPERMAKING, Drying, Cylinders, Moisture absorption, Felt**

Mechanism of moisture transfer from paper to felt during hot surface drying. L. A. Kirk, F. L. Hudson & J. W. S. Hearle. *Paper Technology*, 4 (Jun 63) p.251-7. il. refs.

**PAPERMAKING, Drying, Heat transfer**

Heat transfer characteristics in the drying of paper. A. P. Redfern. *Paper Maker*, 145 (Jun 63) p.57-60. il. refs.

**PAPERMAKING, Drying, Machines**

Role of high velocity dryers in papermaking. J. D. Whittaker. *Paper Technology*, 4 (Jun 63) p.275-9. il. refs.

**PAPERMAKING, Drying, Microwaves**

Microwave heating. *Instrument & Control Engng.* (Jul 63) p.9-10. il.

**PAPERMAKING, Drying, Steam plant**

Steam supply and condensate removal. L. A. Robey & A. B. Webzell. *Paper Technology*, 4 (Jun 63) p.235-44. il.

**PAPERMAKING, Drying, Stenters**

Use of a textile stenter to improve the dimensional stability of paper. R. W. Fairest & F. L. Hudson. *Paper Technology*, 4 (Apr 63) p.149-52. il. refs.

**PAPERMAKING, Education**

Education at Manchester: an American appreciation. J. A. Van Den Akker. *World's Paper Trade Rev.*, 159 (6 Jun 63) p.1832+. refs.

**PAPERMAKING, Effluents, Land disposal**

Pulp and papermill waste disposal. *Effluent & Water Treatment J.*, 3 (Jun 63) p.330+. refs.

**PAPERMAKING, Effluents, Treatment, Biological**

Biological effluent treatment. *Paper Maker*, 146 (Sep 63) p.62+. il.

**PAPERMAKING, Effluents, Treatment, Precipitation, Chemical**

Chemical precipitation in paper industry effluent treatment. R. H. Lunney. *Effluent & Water Treatment J.*, 3 (Aug 63) p.430-4. il. refs.

**PAPERMAKING, Equipment**

Peter Dixon's modernisation programme. *Paper Maker*, 145 (Feb 63) p.40+

**PAPERMAKING, Equipment, Hydraulic**

Hydraulics in the papermill. J. Lund. *Paper Technology*, 4 (Feb 63) p.49-53. il.

**PAPERMAKING, Felt, Drying, Machines**

Stretching and drying machine for papermaking machine felts [Oy Tampella Ab, Tammerfors, Finland] Ball Bearing J., no.137 (Nov 63) p.27-30. il.

**PAPERMAKING, Felt, Stretching, Machines**

Stretching and drying machine for papermaking machine felts [Oy Tampella Ab, Tammerfors, Finland] Ball Bearing J., no.137 (Nov 63) p.27-30. il.

**PAPERMAKING, Fillers**

How white is white?—Mineral fillers and loadings in paper, and the evaluation of whiteness. R. R. A. Higham. *Paper & Print*, 36 (Autumn 63) p.308-9

**PAPERMAKING, Fillers, Retention aids**

Recent advances in the improvement of filler retention. R. L. Grant. *Paper Technology*, 4 (Apr 63) p.157-62. il. refs.

**PAPERMAKING, Fourstones**

Fourstones Paper Mill (extracts) G. T. Mandl. *Paper Maker*, 145 (Jun 63) p.66+

**PAPERMAKING, Great Britain**

Paper mills—their geographical distribution in Britain.

A. H. Shorter. *Paper & Print*, 36 (Summer 63) p.157+. il.

**PAPERMAKING, Information services**

Our subject index. S. Lammle. *What we are doing* (Oct 63) p.40-50

Technical section of the B.P. & B.M.A.—its contribution to paper and board development. *Paper & Print*, 36 (Summer 63) p.193

**PAPERMAKING, Instruments, Maintenance, Work study**

Planning labour & materials for an instrument department, pt.1. F. Church. *Instrument Practice*, 17 (Nov 63) p.1179-84. il.

Planning labour & materials for an instrument department, pt.2: shift mechanics. F. Church. *Instrument Practice*, 17 (Dec 63) p.1307-12. il.

**PAPERMAKING, Ireland**

Paper and board mills of the Irish Republic. *Paper Market* (Jan 63) p.12-13. il.

Paper mills in Ireland. A. H. Shorter. *Paper Maker*, 146 (Jul 63) p.71-3. refs.

**PAPERMAKING, Laboratories, Architecture**

Reed research building. *Glass Age*, 6 (Aug 63) p.29. il.

**PAPERMAKING, Libraries**

Section profiles: Library and Information Section. *What We Are Doing* (Mar 63) p.14-16. il.

**PAPERMAKING, Machines**

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#### **PASTA ALIMENTARE**

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**PELTIER EFFECT, Resistance welding. See WELDING,****Resistance, Peltier effect****PELTIER EFFECT, Thermal conductivity measurement. See****THERMAL CONDUCTIVITY, Measurement, Peltier effect****PENANG****See****DAMS, Penang****PENDULUM MILLS, Rolling, Metal strips. See STRIPS,****Metal, Rolling, Mills, Pendulum****PENDULUMS, Centrifugal**

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PERIODICALS, Aircraft. See AIRCRAFT, Periodicals

PERIODICALS, Printing industry. See PRINTING, Industry, Periodicals

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GAS, Natural, Liquefied, Storage, Tanks, Linings, Perlite

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**PERMANENT WAY**

Related Headings:

RAILWAYS, Gauges

**PERMANENT WAY**, Conversion to cycle tracks. See **CYCLE TRACKS**, Conversion from permanent way**PERMANENT WAY**, Conversion to footways. See **FOOTWAYS**, Conversion from permanent way**PERMANENT WAY**, Conversion to roads. See **ROADS**, Conversion from permanent way**PERMANENT WAY, Drainage, Trenchers**Rail-mounted trencher. *Railway Magazine*, 109 (Jul 63) p.463-4. il.Rail mounted trencher [Hunslet] *Gas & Coke*, 25 (Jul 63) p.313-14. il.Railway mounted trencher for track drainage. *Railway Gaz.*, 118 (10 May 63) p.526-7. il.**PERMANENT WAY, Equipment, Concrete**Concrete construction on railways. *Concrete & Constructional Engrg.*, 58 (Aug 63) p.325-30. il.**PERMANENT WAY, Exhibits**Permanent way exhibit at Longmoor. *W. Moorhouse. Permanent Way Instn. J.*, 81 pt.2 (1963) p.129-33. il.**PERMANENT WAY, Foundations, Soil, Frost insulation, Bark**  
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PESTS, Wood, Houses. See HOUSES, Wood, Pests

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DIESEL FUEL OIL

FUEL OIL

GAS OIL

KEROSENE

NAPHTHA

PETROCHEMICALS

PETROL

PRIMARY FLASH DISTILLATE

SHALE OIL

WHITE MINERAL OIL

**PETROLEUM—SUBHEADINGS—Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

*History**Particular countries*

*Western Europe*

*Iraq*

*Iran*

*India*

*Libya*

*Nigeria*

*Organisations**Information services**Education**Research*

*Laboratories*

*Problems*

*Fires*

*Chemistry*

*Analysis*

*Determination of*

*Gas chromatography*

*Constituents*

*Deposits*

*Genesis*

*Reservoirs*

*Equipment*

*Pipes*

*Testing**Production*

*Prospecting*

*Drilling*

*Refining*

*Refineries*

*Conditioning*

*Handling*

*Storage**Transport**Distribution*

*Pipelines*

*Piped*

*Products**Kinds of petroleum by source*

*(Marine Belayim)*

PETROLEUM, Aliphatic alcohol production. See ALCOHOLS, Aliphatic, Production, Petroleum

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**PHASE EQUILIBRIUM DIAGRAMS, Metals. See METALS, Phase equilibrium diagrams**

PHASE FAILURE, Induction motors. See ELECTRIC MOTORS, Induction, Phase failure

PHASE INDICATION, Electric power systems. See ELECTRIC POWER SYSTEMS, Phase indication

PHASE-LOCKED OSCILLATORS, Logical elements, Computers. See COMPUTERS, Logical elements, Oscillators, Phase-locked

PHASE PLANE ANALYSIS, Non-linear control systems. See CONTROL SYSTEMS, Non-linear, Analysis, Phase plane

PHASE PLANE ANALYSIS, Transient stability, Electric power systems. See ELECTRIC POWER SYSTEMS, Stability, Transient, Analysis, Phase plane

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PHENOLIC RESINS-PAPER, Discs, Rotary vacuum filters, Cleaning plant, Coal. See COAL, Cleaning, Plant, Filters, Vacuum, Rotary, Discs, Paper-Phenolic resins

PHENOLIC RESINS-PAPER, Rollers. See ROLLERS, Paper-Phenolic resins

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NAPHTHOLS  
NONYLPHENOL

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ZINC SULPHIDE, Phosphors

ZINC SULPHIDE-COPPER

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Steel, Welding, Cracks, Phosphorus

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Determination of phosphorus

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IRON, Cast, Chill, Mottle defects, Effect of phosphorus

PHOSPHORUS, Organic compounds. See ORGANOPHOS-  
PHORUS COMPOUNDS

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Blocks, Glass, Etching, Photochemical

PHOTOCHEMICAL ETCHING, Metal foil. See FOIL, Metal,  
Etching, Photochemical

PHOTOCHEMICAL ETCHING, Textured moulds, Moulding,  
Plastics. See PLASTICS, Moulding, Moulds, Textured,  
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measurement. See AERIALS, Radiation, Measurement,  
Probes, Photoconductive cells

PHOTOCONDUCTIVE CELLS, Probes, Current distribution  
measurement, Aerials. See AERIALS, Current distribu-  
tion, Measurement, Probes, Photoconductive cells

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PHOTOCOPYING

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ELECTROPHOTOGRAPHY  
MICROFILM

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Drawings, Photocopying

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AIRCRAFT, Engineering, Drawings, Photocopying

PHOTOCOPYING, Drawings, Marking out, Machining. See  
MACHINING, Marking out, Drawings, Photocopying

PHOTOELASTIC STRAIN GAUGES. See STRAIN GAUGES,  
Photoelastic

PHOTOELASTIC TRANSDUCERS, Strata pressure measure-  
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Transducers, Photoelastic

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#### PHOTOELASTICITY

Related Headings:

BIREFRINGENCE

PHOTOELASTICITY, Biaxial tensile tests. See TENSILE  
TESTS, Biaxial, Photoelasticity

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EPOXY RESINS, Compression, Photoelasticity

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Prestressed concrete. See CONCRETE, Prestressed,  
Stresses, Measurement, Instruments, Photoelastic

PHOTOELASTICITY, Studies, Elastic impact, Edges, Glass  
plates. See PLATES, Glass, Edges, Impact, Elastic,  
Studies, Photoelasticity

PHOTOELECTRIC AMPLIFIERS. See AMPLIFIERS, Photo-  
electric

PHOTOELECTRIC ANALYSIS, Polarised light. See LIGHT,  
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PHOTOCONDUCTIVE CELLS

PHOTOEMISSION CELLS

PHOTOVOLTAIC CELLS

PHOTOELECTRIC CELLS, Control systems, Processing,  
Negative-positive colour photography. See PHOTO-  
GRAPHY, Colour, Negative-Positive, Processing,  
Control systems, Photoelectric cells

PHOTOELECTRIC CELLS, Controls, Lamps, Street lighting.  
See STREETS, Lighting, Lamps, Controls, Photoelectric  
cells

PHOTOELECTRIC CONTROL SYSTEMS, Food processing.

See FOOD, Processing, Control systems, Photoelectric  
PHOTOELECTRIC COUNTERS, Laundries. See LAUNDRIES,  
Work counters, Photoelectric

PHOTOELECTRIC DETECTORS, Auto-collimating telescopes.  
See TELESCOPES, Auto-collimating, Detectors, Photo-  
electric

PHOTOELECTRIC DETECTORS, Cobbles, Rolling, Steel rods.  
See RODS, Steel, Rolling, Cobbles, Detectors, Photo-  
electric

PHOTOELECTRIC DETECTORS, Faults, Warp knitting. See  
KNITTING, Warp, Faults, Detectors, Photoelectric

PHOTOELECTRIC DETECTORS, Instabilities, Stock flow,  
Papermaking machines. See PAPERMAKING, Machines,  
Stock flow, Instabilities, Detectors, Photoelectric

PHOTOELECTRIC EQUIPMENT, Inspection, Tinplate  
production. See TINPLATE, Production, Inspection,  
Equipment, Photoelectric

PHOTOELECTRIC EQUIPMENT, Register control, Colour  
printing. See PRINTING, Colour, Register, Control,  
Photoelectric equipment



**PHOTOELECTRIC EQUIPMENT**, Register control, Preprinted webs, Colour printing, Advertisements, Newspapers. See **NEWSPAPERS**, Advertisements, Printing, Colour, Preprinted webs, Register, Control, Photoelectric equipment

**PHOTOELECTRIC GUARDS**, Hydraulic presses. See **PRESSES**, Hydraulic, Guards, Photoelectric

**PHOTOELECTRIC IONISATION**, Solid particles. See **PARTICLES**, Ionisation, Photoelectric

**PHOTOELECTRIC MEASUREMENT**, Diameters, Insulated wires. See **WIRES**, Insulated, Diameters, Measurement, Gauges, Photoelectric

**PHOTOELECTRIC MEASUREMENT**, Transmission errors, Spur gears. See **GEARS**, Spur, Transmission errors, Measurement, Photoelectric

**PHOTOELECTRIC MIXING**, Laser beams, Millimetre frequency generation. See **MILLIMETRE WAVE FREQUENCY**, Generation, Laser beams, Photoelectric mixing

**PHOTOELECTRIC PYROMETERS**. See **PYROMETERS**, Photoelectric

**PHOTOELECTRIC PYROMETRY**. See **PYROMETRY**, photoelectric

**PHOTOELECTRIC RECORDING**, Movement, Wagons, Railways. See **RAILWAYS**, Wagons, Movement recording, Photoelectric

**PHOTOELECTRIC SCANNING**, Colour separations, Half-tone illustrations. See **ILLUSTRATIONS**, Half-tone, Colour separations, Scanning, Photoelectric

**PHOTOELECTRIC SCANNING**, Particle size determination, Pesticides. See **PESTICIDES**, Particle size determination, Scanning, Photoelectric

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#### **PHOTOENGRAVING**

Related Headings:

PROCESS CAMERAS

#### **PHOTOENGRAVING, Colour, Masking**

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#### **PHOTOENGRAVING, Colour, Separation**

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#### **PHOTOENGRAVING, Education**

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#### **PHOTOENGRAVING, Line, History**

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**PHOTOENGRAVING**, Microminiature electronic circuits. See **CIRCUITS**, Electronics, Microminiature, Photoengraving

**PHOTOENGRAVING**, Semiconductors. See **SEMICONDUCTORS**, Photoengraving

#### **PHOTOENGRAVING, Sweden**

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#### **PHOTOGRAMMETRY**

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Kern PG 2 photogrammetric plotter. H. Yzerman. *Photogrammetric Record*, 4 (Apr 63) p.218-38. il. refs.

**PHOTOGRAMMETRY**, Surveying, Opencast mining, Brown coal. See **COAL**, Brown, Mining, Opencast, Surveying, Photogrammetry

**PHOTOGRAPHS**, Photogrammetry. See **PHOTOGRAMMETRY**, Photographs

#### **PHOTOGRAPHY**

Related Headings:

CAMERAS

CINEMATOGRAPHY

ELECTROPHOTOGRAPHY

EXPOSURE METERS

FILM, Photographic

MICROPHOTOGRAPHY

PHOTOMICROGRAPHY

PROCESS PHOTOGRAPHY

PROJECTORS

WET-COLLODION PROCESS

#### **PHOTOGRAPHY—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Particular localities

*Italy*

*Education*

*Premises*

*Studios*

*Equipment*

*Lighting equipment.*

*Exposure*

*Processing*

*Darkroom*

*Development*

*Developers*

*Printing*

*Finishing*

Sensitised materials

*Emulsions*

*Information theory*

*Modulation transfer function*

*Equivalent quantum efficiency*

Photographic qualities

*Contrast*

## PHOTOGRAPHY—SUBHEADINGS—Synopsis—cont.

Image Sharpness

Photographic specialities

Colour

Flashlight

Stereoscopic

High speed

Scientific

Industrial

Air

Systems

Kalvar

PHOTOGRAPHY, Aerial reconnaissance. See RECON-  
NAISSANCE, Aerial, Photography

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**PLASTICISERS, Effect on durability, Acrylic paint. See PAINT, Acrylic, Durability, Effect of plasticisers****PLASTICISERS, P.V.C. See P.V.C., Plasticisers****PLASTICISERS, P.V.C., Coatings, Steel. See STEEL, Coatings, P.V.C., Plasticisers****PLASTICISERS, P.V.C., Sheets. See SHEETS, P.V.C., Plasticisers****PLASTICISERS, Rubber. See RUBBER, Plasticisers****PLASTICITY**

Related Headings:

**STRESS RELAXATION****PLASTICITY, Clay. See CLAY, Plasticity****PLASTICITY, Leather, Uppers, Footwear. See FOOTWEAR, Uppers, Leather, Plasticity****PLASTICITY, Pressure vessels. See PRESSURE VESSELS, Plasticity****PLASTICS**

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## PLASTICS

## Related Headings:

ACETAL RESINS  
 ACRYLIC ACID  
 ACRYLIC PLASTICS  
 ACRYLONITRILE  
 ACRYLONITRILE-BUTADIENE-STYRENE  
 ALKYD RESINS  
 AMINO RESINS  
 CELLULOSE ACETATE  
 EPOXY RESINS  
 FLUOROCARBONS, Resins  
 FURANE, Resins  
 NYLON  
 NYLON 6  
 P.T.F.E.  
 P.V.A.  
 P.V.C.  
 PHENOLIC RESINS  
 PHENYLENE SULPHIDE, Polymer  
 PLASTICISERS  
 POLYAMIDES  
 POLYCARBONATE RESINS  
 POLYDIPHENYL OXIDE  
 POLYESTERS  
 POLYETHER ESTERS  
 POLYETHYLENE TEREPHTHALATE  
 POLYISOBUTENE  
 POLYMETHYL METHACRYLATE  
 POLYPROPYLENE  
 POLYSTYRENE  
 POLYTHENE  
 POLYURETHANE  
 POLYVINYL ALCOHOL  
 POLYVINYL CARBAZOLE  
 POLYVINYLIDENE CHLORIDE  
 RESINS  
 THERMOPLASTICS  
 UREA-FORMALDEHYDE  
 VINYL POLYMERS

## PLASTICS-SUBHEADINGS-Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Classification  
 Education  
 Research  
 Standards  
 Patents

Properties  
 Strength

Creep  
 Friction  
 Toxicity

## Chemistry

Molecular structure  
 Thermal decomposition  
 Gases

## Technical activities

Manufactures  
 Inspection  
 Mixing  
 Forming  
 Moulding  
 Extrusion  
 Extruders  
 Casting  
 Stamping

## PLASTICS-SUBHEADINGS-Synopsis-cont.

## Drying

Dryers

Metallising

Electroplating

Printing

Bulk handling

Lubrication

## Scrap

## Types of plastics

By derivation

Petrochemicals

Porous

Expanded

Thermosetting

Reinforced

## Applications

Engineering

Electrical insulating materials

Shipbuilding materials

Building materials

Packaging materials

Military technology

PLASTICS, Adhesives, Aircraft structures. See AIRCRAFT, Structures, Adhesives, Synthetic resin

PLASTICS, Adhesives, Wood manufactures. See WOOD, Manufactures, Adhesives, Synthetic resins

PLASTICS, Agricultural equipment. See AGRICULTURAL EQUIPMENT, Plastics

PLASTICS, Aircraft components. See AIRCRAFT, Components, Plastics

PLASTICS, Ballistic missile warning station components. See MISSILES, Ballistic, Warning, Stations, Components, Plastics

PLASTICS, Boats. See BOATS, Plastics

PLASTICS, Bodies, Motor cars. See MOTOR CARS, Bodies, Plastics

PLASTICS, Bottles. See BOTTLES, Plastics

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- PLASTICS, Building materials, U.S.A.**  
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- PLASTICS, Bulk handling, Pneumatic equipment**  
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- PLASTICS, Cables.** See CABLES, Electric, Plastics
- PLASTICS, Cables, Telephony.** See TELEPHONY, Cables, Plastics
- PLASTICS, Canopies, Cockpits, Aircraft.** See AIRCRAFT, Cockpits, Canopies, Plastics
- PLASTICS, Casting**  
Massive plastic castings. *Mechanical World*, 143 (Nov 63) p.488-9
- PLASTICS, Casting, Rotational**  
Rotational casting or injection moulding? P. Spiro. *Applied Plastics*, 6 (Jan 63) p.26+
- PLASTICS, Caulking, Concrete, Dams.** See DAMS, Concrete, Caulking, Plastics
- PLASTICS, Chain conveyors.** See CONVEYORS, Chain, Plastics
- PLASTICS, Chemical engineering plant.** See CHEMICAL ENGINEERING, Plant, Plastics
- PLASTICS, Classification**  
Classification of plastics (summary) *Mechanical World*, 143 (Mar 63) p.94-5
- PLASTICS, Clock movements.** See CLOCKS, Movements, Plastics
- PLASTICS, Closures, Containers.** See CONTAINERS, Closures, Plastics
- PLASTICS, Coated fillet welded mild steel.** See STEEL, Mild, Welded, Fillet, Coated, Plastics
- PLASTICS, Coating, Metals.** See METALS, Coating, Plastics
- PLASTICS, Coating, Wires.** See WIRES, Coating, Plastics
- PLASTICS, Coatings.** See COATINGS, Plastics
- PLASTICS, Coatings, Aluminium strips.** See STRIPS, Aluminium, Coatings, Plastics
- PLASTICS, Coatings, Fabrics, Linings, Motor car parts.** See MOTOR CARS, Parts, Linings, Fabrics, Plastic coated
- PLASTICS, Coatings, Hulls.** See HULLS, Coatings, Plastics
- PLASTICS, Coatings, Photoelasticity.** See PHOTO-ELASTICITY, Coatings, Plastics
- PLASTICS, Commercial vehicle parts.** See VEHICLES, Commercial, Parts, Plastics
- PLASTICS, Concrete bond material.** See CONCRETE, Plastics bonded
- PLASTICS, Containers.** See CONTAINERS, Plastics
- PLASTICS, Containers, Commercial vehicles.** See VEHICLES, Commercial, Containers, Plastics
- PLASTICS, Containers, Fish.** See FISH, Containers, Plastics
- PLASTICS, Containers, Salt.** See SALT, Containers, Plastic
- PLASTICS, Creep, Testing**  
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- PLASTICS, Dinghies.** See DINGHIES, Plastics
- PLASTICS, Dryers**  
Munster granulate driers. *International Plastics Engng.*, 3 (Feb 63) p.76-7. il.
- PLASTICS, Education**  
Plastics teaching and research at Bradford Institute of Technology. W. R. Moore. *Plastics Inst. Trans. & J.*, 31 (Oct 63) p.97. il.
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- PLASTICS, Electroplating**  
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- PLASTICS, Expanded, Manufactures**  
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- PLASTICS, Expanded, Manufactures, Mechanical handling**  
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- PLASTICS, Extruders, Pre-mixing**  
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- PLASTICS, Extruders, Screws, Manufactures**  
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PLASTICS, Film. See FILM, Polypropylene

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PLASTICS, Film, Pouches, Packaging, Beetroots. See BEETROOTS, Packaging, Pouches, Film, Plastics

PLASTICS, Film, Pouches, Packaging, Prunes. See PRUNES, Packaging, Pouches, Film, Plastics

PLASTICS, Fittings, Lighting. See LIGHTING, Fittings, Plastics

PLASTICS, Floor coverings. See FLOORS, Coverings, Plastics

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PLASTICS, Laminates, Pouches, Vacuum packaging, Bacon. See BACON, Packaging, Vacuum, Pouches, Plastics, Laminates

PLASTICS, Lifeboats. See LIFEBOATS, Plastics

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**PLASTICS, Moulding, Moulds, Steel**

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**PLASTICS, Mouldings, Shot-blasting**

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Permeable plastics. *Brit. Plastics*, 36 (Feb 63) p.66-7. il.

**PLASTICS, Powders, Coatings. See COATINGS, Powders, Plastics****PLASTICS, Pressure vessels. See PRESSURE VESSELS, Plastics****PLASTICS, Printing, Machines**

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**PLASTICS, Reinforced**

## Related Headings:

- EPOXY RESIN-GLASS FIBRE  
POLYESTER-GLASS FIBRE  
POLYESTER-SISAL

**PLASTICS, Reinforced, Aircraft structures.** See AIRCRAFT, Structures, Plastics, Reinforced

**PLASTICS, Reinforced, Bearings.** See BEARINGS, Plastics, Reinforced

**PLASTICS, Reinforced, Boats.** See BOATS, Plastics, Reinforced

**PLASTICS, Reinforced, Bodies, Commercial vehicles.** See VEHICLES, Commercial, Bodies, Plastics, Reinforced

**PLASTICS, Reinforced, Bodies, Motor cars.** See MOTOR CARS, Bodies, Plastics, Reinforced

**PLASTICS, Reinforced, Bodies, Motor vehicles.** See MOTOR VEHICLES, Bodies, Plastics, Reinforced

**PLASTICS, Reinforced, Building materials**

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**PLASTICS, Reinforced, Chemical engineering plant.** See CHEMICAL ENGINEERING, Plant, Plastics, Reinforced

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**PLASTICS, Reinforced, Moulding, Moulds**

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**PLASTICS, Reinforced, Pre-impregnated**

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**PLASTICS, Reinforced, Rolling stock, Railways.** See ROLLING STOCK, Railways, Plastics, Reinforced

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**PLASTICS, Reinforced-glass fibre, Bodies, Lorries.** See LORRIES, Bodies, Plastics, Reinforced-Glass fibre

**PLASTICS, Reinforced-Glass fibre, Bodies, Motor coaches.** See MOTOR COACHES, Bodies, Plastics, Reinforced-Glass fibre

**PLASTICS, Reinforced-Glass fibre, Bodies, Motor vehicles.** See MOTOR VEHICLES, Bodies, Plastics, Reinforced-Glass fibre

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**PLASTICS, Reinforced-Glass fibre, Machining, Diamond**

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**PLASTICS, Reinforced-Sisal**

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**PLASTICS, Rolling mill components.** See ROLLING, Mills, Components, Plastics

**PLASTICS, Rolling stock, Railways.** See ROLLING STOCK (Railways) Plastics

**PLASTICS, Sachets, Beer.** See BEER, Sachets, Plastics

**PLASTICS, Sacks.** See SACKS, Plastic

**PLASTICS, Scrap, Processing**

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**PLASTICS, Sheets.** See SHEETS, Plastics

**PLASTICS, Shipbuilding materials**

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**PLASTICS, Spheres, Thermal insulation, Surfaces, Liquids.** See LIQUIDS, Surfaces, Insulation, Thermal, Spheres, Plastics

**PLASTICS, Standards**

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**PLASTICS, Tapes, Input, Control systems, Knitwear manufacture machines.** See KNITWEAR, Manufactures, Machines, Control systems, Input, Tapes, Plastic

**PLASTICS, Thermal decomposition, Products, Gas chromatography**

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**PLASTICS, Thermosetting, Electroplating**

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**PLASTICS, Thermosetting, Insulation, Transformers.** See TRANSFORMERS, Insulation, Plastics, Thermosetting

**PLASTICS, Tools, Aircraft manufactures.** See AIRCRAFT, Manufactures, Tools, Plastics

**PLASTICS, Toxicity**

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**PLASTICS, Toys.** See TOYS, Plastics

**PLASTICS, Uppers, Shoes.** See SHOES, Uppers, Plastics

**PLASTICS, Watch movements.** See WATCHES, Movements, Plastics

**PLASTICS, Windscreens, Aircraft.** See AIRCRAFT, Windscreens, Plastics

**PLASTICS-ASBESTOS, Laminates.** See LAMINATES, Asbestos-Plastics

**PLASTISOLS, P.V.C.** See P.V.C., Plastisols

**PLATE COLUMNS**

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**PLATE COLUMNS, Distillation.** See DISTILLATION, Columns, Plate

**PLATE CONVEYORS, Coal mining.** See COAL, Mining, Conveyors, Plate

**PLATE GLASS.** See GLASS, Plate

**PLATE HEIGHT, Flat bed cylinder printing.** See PRINTING, Machines, Flat bed cylinder, Plate height

**PLATE-MAKING, Photolithography.** See PHOTOLITHOGRAPHY, Plate-making

**PLATE-MAKING, Printing.** See PRINTING, Plate-making

**PLATE VERTICAL FREEZERS.** See FREEZERS, Plate, Vertical

**PLATELETS, Crystals.** See CRYSTALS, Platelets

**PLATENS, Printing machines.** See PRINTING, Machines, Platens

**PLATES-SUBHEADINGS-Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Strength  
Bending

Materials

Metals

Steel

Steel-Chromium-Nickel

Steel-Nickel

Aluminium

Aluminium alloy

Copper

Nickel alloy

Bi-metallic

Glass

Types of plates

Perforated

Holes

Orthotropic

Rectangular

Circular

Cantilever

Applications

(Surface)

(Girders)

(Boilers)

(Pressure vessels)

(Ships)

(Hulls)

**PLATES, Aluminium, Aircraft structures.** See AIRCRAFT, Structures, Plates, Aluminium

**PLATES, Aluminium, Forming, Presses**

Forming aluminium sheet and plate. Light Metals, 26 (Jan 63) p.42. il.

**PLATES, Aluminium, Sawing**

Three-head saw reduces cutting time [Ty-Sa-Man] Metal-working Production, 107 (6 Nov 63) p.74-5. il.

**PLATES, Aluminium, Stiffened, Skewed, Corners, Stresses**

Stresses near corners of skewed stiffened plates (summary) J. B. Kennedy & I. C. Martens. Structural Engr., 41 (Nov 63) p.345-6. il.

**PLATES, Aluminium alloy, Aircraft structures.** See AIRCRAFT, Structures, Plates, Aluminium alloy

**PLATES, Aluminium alloy, Extruded, Fibre textures**

Fibre textures of aluminium alloy extruded rod and plate.  
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**PLATES, Bending, Transverse, Load, Influence fields**

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**PLATES, Bi-metallic, Bending, Heat, Transverse**

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G. W. Morland. *J. of Mechanical Engng. Science*, 4 (Dec 62) p.315-21. il.

**PLATES (Boilers) Thickness, Measurement, Ultrasonics**

Screening boiler plate thickness: ultrasonic measuring at Finsbury. J. A. McColgan. *Consulting Engr.*, 24 (Sep 63) p.317. il.

**PLATES, Cantilever, Rectangular, Vibrations, Frequencies, Calculation**

Natural frequencies of uniform and non-uniform rectangular cantilever plates. R. Punkett. *J. of Mechanical Engng. Science*, 5 (Jun 63) p.146-56. il. refs.

**PLATES, Circular, Built-in edges, Rotation**

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**PLATES, Circular, Compressible, Creep**

Creep of compressible circular plates. S. A. Patel, F. A. Cozzarelli & B. Venkatraman. *International J. of Mechanical Sciences*, 5 (Jan/Feb 63) p.77-85. refs.

**PLATES, Circular, Concentric ring supported, Bending**

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**PLATES, Circular, Pressurised, Restraint**

Optimum elastic restraint for pressurised circular plates.  
C. W. Bert. *J. of R. Aeronautical Soc.*, 67 (Aug 63) p.525-6. refs.

**PLATES, Circular, Rib-Reinforced, Rigidity**

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PLATES, Clamping systems, Rotary machines, Printing. See PRINTING, Machines, Rotary, Plate clamping systems

PLATES, Condensers, Steam turbines. See STEAM, Turbines, Condensers, Plates

**PLATES, Copper, Edge cracked, Fatigue tests**

Alternating stress required to propagate edge cracks in copper and nickel-chromium alloy steel plates. N. E. Frost. *J. of Mechanical Engng. Science*, 5 (Mar 63) p.15-22. il. refs.

PLATES, Cores, Transformers. See TRANSFORMERS, Cores, Plates

PLATES, Flat, Concrete, Structures. See STRUCTURES, Concrete, Flat plate

PLATES, Gearboxes, Computers, Aircraft. See AIRCRAFT, Computers, Gearboxes, Plates

**PLATES (Girders) Web, Steel, Welded, Fatigue**

Fatigue rigs for full-scale. *Engineering*, 195 (29 Mar 63) p.442-3. il.

**PLATES, Glass, Edges, Impact, Elastic, Studies, Photoelasticity**

Photoelastic study of elastic impact on the edge of a plate.  
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**PLATES, Holes, Circular, Stresses**

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**PLATES, Holes, Polygonal, Stresses**

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**PLATES (Hulls) Surfaces, Roughness**

Survey of hull and propeller roughness data. F. Wellman. *Shipbuilder*, 70 (Jul 63) p.367-72. il. refs.

PLATES, Hulls, Tankers. See TANKERS, Ships, Hulls, Plates

PLATES, Lead, Batteries. See BATTERIES, Lead, Plates

PLATES, Letterpress printing, Conversion to lithography plates. See LITHOGRAPHY, Plates, Conversion from letterpress plates

PLATES, Letterpress printing, Conversion to photolithography plates. See PHOTOLITHOGRAPHY, Plates, Conversion from letterpress plates

PLATES, Lithography. See LITHOGRAPHY, Plates

PLATES, Magnetic cores. See CORES, Magnetic, Plates

**PLATES, Metals, Bending, Rolls**

Investigations into the working accuracy of bending rolls.  
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**PLATES, Metals, Cracking, Strain**

Strain field set up on a plate surface by a running brittle crack. J. M. Cargill. *J. of Mechanical Engng. Science*, 5 (Mar 63) p.28-37. il. refs.

PLATES, Mixing, Plastics. See PLASTICS, Mixing, Plates

PLATES, Nickel-Cadmium batteries. See BATTERIES, Nickel-Cadmium, Plates

**PLATES, Nickel alloy, Welding, Arc, Argon shielded**

Fine-wire welding of some nickel alloys. P. Hancock, D. J. Heath & N. Stephenson. *Welding & Metal Fabrication*, 31 (Jan 63) p.20-8. il. refs.

**PLATES, Orthotropic, Rectangular, Bending, Analysis, Maclaurin's series**

Analysis of an orthotropic plate by Maclaurin's series.  
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**PLATES, Perforated, Mechanical properties**

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PLATES, Photolithography. See PHOTOLITHOGRAPHY, Plates

**PLATES (Pressure vessels) Manufactures**

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**PLATES, Rectangular, Buckling, Compression**

Some observations on the compressive buckling of rectangular plates. W. H. Wittrick. *Aeronautical Q.*, 14 (Feb 63) p.17-30. il. refs.

**PLATES, Rectangular, Buckling, Shear**

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**PLATES, Rectangular, Heated, Bending, Lengthwise**

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**PLATES, Rectangular, Stiffened, Vibrations**

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Vibration of stiffened rectangular plates. S. Mahalingam. *J. of R. Aeronautical Soc.*, 67 (May 63) p.305-7. il. refs.

**PLATES, Rectangular, Thermal stresses**

Thermal stresses in a long rectangular plate constrained at one of the shorter edges. K. T. Sundara Raja Tyengar & R. S. Alwar. *International J. of Mechanical Sciences*, 4 (Nov/Dec 62) p.485-90. refs.

**PLATES, Roofs, Churches. See CHURCHES, Roofs, Plates****PLATES (Ships) Steel, Flame cutting, Control systems**

Numerically controlled flame cutting. *Measurement & Control*, 2 (Jul 63) p.286-9. il.

Operation of the British Oxygen-Ferranti automatic gas cutting machine [Eagle I] F. J. Robinson. *Machinery*, 103 (3 Jul 63) p.14-22. il.

**PLATES (Ships) Steel, Mechanical handling**

Efficient arrangements for heavy plate manipulation: methods and equipment employed at the Wallsend Shipyard of Swan Hunter & Wigham Richardson, Ltd. F. J. Robinson. *Machinery*, 102 (15 May 63) p.1118-23. il.

Flow-line methods at Charles Connell. *Shipping World*, 149 (17 Jul 63) p.91-3. il.

Flow-line shipbuilding. *Shipbuilding & Shipping Record*, 102 (8 Aug 63) p.178-80. il.

Further modernisation at Walker Naval Yard. *Engineer*, 216 (4 Oct 63) p.545-7. il.

New plate-handling facilities at Vickers-Armstrongs' Naval Yard. R. J. W. Rudkin & J. C. Prosser. *Shipbuilder*, 70 (Oct 63) p.505-8. il.

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**PLATES (Ships) Steel, Welding, Electrosag**

Electrosag process for shipyards. G. Morath. *Welding & Metal Fabrication*, 31 (Sep 63) p.384-6. il.

**PLATES (Ships) Thickness, Measurement, Ultrasonics**

Ultrasonic measuring of ships' plating thicknesses. *Shipping World*, 148 (3 Apr 63) p.674. il.

**PLATES, Steel, Fork truck parts. See FORK TRUCKS, Parts, Plates, Steel****PLATES, Steel, Handling equipment**

Mechanical handling at Consett's 4-high plate mill. R. Jackson. *Productivity*, 1 (Nov/Dec 62) p.64-6. il.

**PLATES, Steel, Manufactures**

Steel plate levelling line [Patent Shaft Steel Works] *Engineer*, 216 (29 Nov 63) p.906-7. il.

**PLATES, Steel, Mild, Fracture, Brittle, Load cycling**

Load cycling in the low endurance range in relation to brittle fracture of mild steel (extracts) G. P. Tilley & P. P. Benham. *Iron & Steel*, 36 (22 May 63) p.243-6. il.

**PLATES, Steel, Mild, Welding, Butt, Bend testing**

Bend test for welds in thick plate. P. T. Houldcroft & D. M. Griffiths. *Brit. Welding J.*, 10 (May 63) p.266-9. il. refs.

**PLATES, Steel, Pipes. See PIPES, Plates, Steel****PLATES, Steel, Pressure vessels, Nuclear reactors. See NUCLEAR REACTORS, Pressure vessels, Plates, Steel****PLATES, Steel, Rolling**

Performance criteria applied to roughing and finishing stands of a plate mill. W. L. Marks. *J. of Iron & Steel Inst.*, 201 (Jan 63) p.39-42

**PLATES, Steel, Welded, Butt, Impact strength**

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**PLATES, Steel, Welded, Stress relieved, Tensile tests**

Effects of thermal stress relief and stress relieving conditions on the fracture of notched and welded wide plates. A. A. Wells & F. M. Burdekin. *Brit. Welding J.*, 10 (May 63) p.270-6. il. refs.

**PLATES, Steel—Chromium—Nickel, Edge cracked, Fatigue tests**

Alternating stress required to propagate edge cracks in copper and nickel-chromium alloy steel plates. N. E. Frost. *J. of Mechanical Engng. Science*, 5 (Mar 63) p.15-22. il. refs.

**PLATES, Steel—Nickel, Welding**

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**PLATES (Surface) Granite**

Microflat black granite surface plates and structural components. *Machinery*, 103 (10 Jul 63) p.89-90. il.

**PLATES, Tank assembly. See TANKS, Assembly, Plates****PLATES, Tubes, Heat exchangers. See HEAT, Exchangers, Tube plates****PLATFORMS, Off shore drilling, Petroleum. See PETROLEUM, Drilling, Off shore, Platforms****PLATING**

Related Headings:

ELECTROPLATE

ELECTROPLATING

FLAME PLATING

**PLATING, Barrel. See BARREL PLATING****PLATING, Barrel, Electronic components. See ELECTRONICS, Components, Barrel plating****PLATING, Nickel**

Electroless nickel plating. J. W. Oswald. *Metal Industry*, 102 (25 Apr 63) p.587. il.

Electroless nickel plating for corrosion protection.

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**PLATINISED PLATINUM, Electrodes. See ELECTRODES, Platinum, Platinised****PLATINUM, Alloys, Catalysts, Combustion, Gases, Effluents. See EFFLUENTS, Gases, Combustion, Catalysts, Platinum alloys****PLATINUM, Anodes. See ANODES, Platinum****PLATINUM, Cathodes. See CATHODES, Platinum****PLATINUM, Electrodes. See ELECTRODES, Platinum****PLATINUM, Gauze. See GAUZE, Platinum****PLATINUM, Resistance thermometers. See THERMOMETERS, Resistance, Platinum****PLATINUM, Sulphuric acid production plant. See SULPHURIC ACID, Production, Plant, Platinum****PLATINUM, Surfaces, Electron work function, Effect of gamma radiation**

Effect of the gamma irradiation on the electron work function of Pt, Au and Co metal surfaces. S. Minc & J. Siejka. *Electrochimica Acta*, 8 (Aug 63) p.631-7. il. refs.

**PLATINUM, Thermal conductivity standards**

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*Brit. J. of Applied Physics*, 14 (Oct 63) p.662-6. il. refs.

**PLATINUM, Wires. See WIRES, Platinum****PLATINUM CORE OXIDE CATHODES. See CATHODES, Oxide, Platinum core****PLATINUM METALS, Electroplating. See ELECTRO-PLATING, Platinum metals****PLATINUM METALS, Research**

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**PLAYFAIR, L., Baron**

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**PLAYGROUNDS**

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**PLAYS, Stage. See STAGE PLAYS****PLESSEY COMPANY (UK) LIMITED, Laboratories**

Plessey Company (UK) Limited. D. C. Scholes. *Brit. Communications & Electronics*, 10 (Jul 63) p.528-33. il.

**PLETHYSMOGRAPHS, Whole body**

Whole-body plethysmograph. F. D. Stott. *Instrument Practice*, 17 (Jan 63) p.48-51. il. refs.

**PLOTTERS, X-Y, Output units, Computers. See COMPUTERS, Output units, X-Y plotters**



**PLOTTING MACHINES**

Co-ordinate layout: manual and electronically-controlled universal plotting-machines. *Production Technology*, 1 (Jul 63) p.132-4. il.

**PLOUGHING**, Mole, P.V.C., Pipes. See **PIPES**, P.V.C., Laying, Mole ploughing

**PLOUGHS, Agriculture, Reversible**

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**PLOUGHS**, Snow clearance, Roads. See **ROADS**, Snow clearance, Ploughs

**PLUGS**, Hardening. See **HARDENING**, Plugs

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**reactors. See NUCLEAR REACTORS**, Fuels, Plutonium

dioxide-Uranium dioxide

**PLYMOUTH**

See

CIVIC CENTRES, Plymouth

LAW COURTS, Plymouth

RAILWAYS, Plymouth-Launceston

TOWN PLANNING, Plymouth

**PLYMOUTH SCHOOL OF ARCHITECTURE**

Plymouth School of Architecture. *Builder*, 204 (18 Jan 63) p.131-3. il.

**PLYWOOD**

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Basic properties of plywood and blockboard, pt.2. R. A. G.

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**PLYWOOD**, Bodies, Motor vehicles. See **MOTOR VEHICLES**,

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**PLYWOOD, Bonding, Adhesives**

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**PNEUMATIC ARRESTERS**, Winding, Mining. See **MINING**,

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**PNEUMATIC BRIDGE HYGROMETERS**. See **HYGROMETERS**,

Pneumatic bridge

**PNEUMATIC CLAMPS**. See **CLAMPS**, Pneumatic

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COMPACTION
- PRESSING, Fireclay. See FIRECLAY, Pressing
- PRESSING, Hot, Powders. See POWDERS, Hot pressing
- PRESSING, Hot, Raw materials, Refractories. See REFRACTORIES, Raw materials, Hot pressing
- PRESSING, Technical ceramics. See CERAMICS, Technical, Pressing
- PRESSURE**
- Related Headings:  
HIGH PRESSURE
- PRESSURE, Catalytic gas reactors. See CHEMICAL REACTORS, Catalytic, Gas, Pressure
- PRESSURE, Cylinders. See CYLINDERS, Pressure
- PRESSURE, Effect on conductance, Electrolytes, Aqueous solutions. See SOLUTIONS, Aqueous, Electrolytes, Conductance, Effect of pressure
- PRESSURE, Effect on thermal transformation, Austenite, Iron-Carbon. See IRON-CARBON, Austenite, Thermal transformation, Effect of pressure
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PRESSURE DIE CASTING, Blocks, Engines, Motor cars. See MOTOR CARS, Engines, Blocks, Die casting, Pressure

PRESSURE DISTRIBUTION, Arch dams. See DAMS, Arch, Pressure distribution

PRESSURE DISTRIBUTION, Mains, Water. See WATER, Mains, Pressure distribution

PRESSURE DISTRIBUTION, Thin aerofoils. See AERO-FOILS, Thin, Pressure distribution

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PRESSURE DROP, Flow, Caustic soda solutions. See CAUSTIC SODA, Solutions, Flow, Pressure drop

PRESSURE DROP, Vapour liquid phase flow, Pipes, Petroleum. See PETROLEUM, Pipes, Flow, Vapour-liquid phase, Pressure drop

PRESSURE ERROR, Aircraft. See AIRCRAFT, Pressure error

PRESSURE GRADIENT, Boiling water. See WATER, Boiling, Pressure gradient

PRESSURE JET BURNERS, Oil-fired fire-tube boilers. See BOILERS, Fire-tube, Oil-fired, Burners, Pressure jet

PRESSURE PACKAGING, Flavouring materials, Food. See FOOD, Flavouring materials, Packaging, Pressure

PRESSURE PIPES, Underground. See PIPES, Pressure, Underground

PRESSURE SUITS, Flights, Astronautics. See ASTRO-NAUTICS, Flights, Pressure suits

PRESSURE SURGES, Centrifugal pumps, Water. See WATER, Pumps, Centrifugal, Pressure surges

PRESSURE SURGES, Pipes. See PIPES, Pressure surges

PRESSURE SWITCHES. See SWITCHES, Pressure

PRESSURE TUBE HEAVY WATER MODERATED REACTORS. See NUCLEAR REACTORS, Heavy water moderated, Pressure tube

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**PRESSURISATION, Cables, Telegraphy.** See **TELEGRAPHY, Cables, Gas pressurisation**

**PRESSURISATION, Cables, Telephony.** See **TELEPHONY, Cables, Gas pressurisation**

**PRESSURISED CIRCULAR PLATES.** See **PLATES, Circular, Pressurised**

**PRESSURISED OIL FILM JOURNAL BEARINGS.** See **BEARINGS, Journal, Pressurised oil film**

**PRESSURISED OIL FILM JOURNAL BEARINGS, Slideways, Boring machines.** See **BORING, Machines, Slideways, Bearings, Journal, Pressurised oil film**

**PRESSURISED OIL FILM JOURNAL BEARINGS, Slideways, Milling machines.** See **MILLING, Machines, Slideways, Bearings, Journal, Pressurised oil film**

**PRESSURISED SLAGGING, Fixed beds, Town gas production.** See **GAS (Town) Production, Fixed beds, Pressurised, Slagging**

**PRESSURISED WATER NUCLEAR REACTORS.** See **NUCLEAR REACTORS, Pressurised water**

**PRESSURISED WATER NUCLEAR REACTORS, Ships.** See **SHIPS, Nuclear propulsion, Reactors, Pressurised water**

**PRESSWORKING**

Related Headings:

INDENTING

PRESS TOOLS

PRESSES

**PRESSWORKING, Motor car parts.** See **MOTOR CARS, Parts, Pressworking**

**PRESSWORKING, Panels, Bodies, Motor vehicles.** See **MOTOR VEHICLES, Bodies, Panels, Pressworking**

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**PRESTRESS, Effect on dielectric strength, Hexane.** See **HEXANE, Dielectric strength, Effect of prestress**

**PRESTRESSED CONCRETE.** See **CONCRETE, Prestressed**  
**PRESTRESSED CONCRETE, Beams.** See **BEAMS, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Beams, Bridges.** See **BRIDGES, Beams, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Bridges.** See **BRIDGES, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Car parks, University buildings.** See **UNIVERSITY BUILDINGS, Car parks, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Composite beams.** See **BEAMS, Composite, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Continuous beams.** See **BEAMS, Continuous, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Frames, Office buildings.** See **OFFICE BUILDINGS, Frames, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Girders, Sluice gates.** See **SLUICE GATES, Girders, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Lintels.** See **LINTELS, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Pressure vessels, Nuclear reactors.** See **NUCLEAR REACTORS, Pressure vessels, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Quays.** See **QUAYS, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Roads.** See **ROADS, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Roofs, Exhibition buildings.** See **EXHIBITION BUILDINGS, Roofs, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Sections.** See **SECTIONS, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Slabs, Bridges.** See **BRIDGES, Slabs, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Sleepers, Rails, Permanent way.** See **PERMANENT WAY, Rails, Sleepers, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Structures.** See **STRUCTURES, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Unsymmetrical sections.** See **SECTIONS, Unsymmetrical, Concrete, Prestressed**

**PRESTRESSED CONCRETE, Warehouses.** See **WAREHOUSES, Concrete, Prestressed**

**PRETENSIONED TENDONS, Prestressed concrete.** See **CONCRETE, Prestressed, Tendons, Pretensioned**

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**PRIME MOVERS**

- Related Headings:
- ELECTRIC MOTORS
  - ENGINES
  - NUCLEAR ENERGY
  - NUCLEAR PROPULSION
  - ROCKETS
  - SOLAR ENERGY
  - STEAM, Engineering
  - STEAM, Turbines

**PRIME MOVERS, Electrical generators.** See **GENERATORS, Electrical, Prime movers**

**PRIMING STOVING PAINT.** See **PAINT, Stoving, Priming**

**PRINT-OUT, Negatives, Microfilm.** See **MICROFILM, Negatives, Print-out**

**PRINT-OUT UNITS, Digital instruments.** See **INSTRUMENTS, Digital, Print-out units**

**PRINTED CIRCUITS.** See **CIRCUITS, Electronics, Printed**

**PRINTED ELEMENTS, Electric heating.** See **HEATING, Electric, Elements, Printed**

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**PRINTING**

## Related Headings:

- COLLOTYPE
- COMPOSING, Printing
- ELECTROTYPES
- ENGRAVING
- ETCHING
- FLEXOGRAPHY
- LITHOGRAPHY
- PHOTOENGRAVING
- PHOTOGRAVURE
- SILK SCREEN PRINTING
- STEREOTYPES
- THERMOGRAPHY
- TYPE-FACES
- TYPE FOUNDING

**PRINTING—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*History**Particular localities*

- Great Britain*
  - Scotland*
  - Edinburgh*
  - Glasgow*

*Europe*

- Netherlands*
- Italy*
- Poland*
- Russia*

*Museums**Education**Apprenticeships**Research**Physical & chemical aspects*

- Effect of humidity*
- Surface physics*
- Surface chemistry*

*Problems**Set off**Works*

- Plant layout*
- Equipment*
  - Machines*
  - Electronic equipment*
  - Control systems*

*Plates**Plate making**Paper**Board**Inks**Technical activities*

- Design*
- Measurements*
- Inspection*
- Make-ready*
- Packing*
- Laminating*



**PRINTING—SUBHEADINGS—Synopsis—cont.**

Technical activities—cont.

Air conditioning

Specialties

Colour

Systems

Dry offset

Electrostatic

**PRINTING, Adhesive labels.** See LABELS, Adhesive, Printing**PRINTING, Air conditioning**

Air conditioning for printers. Paper Market (Feb 63) p.17

**PRINTING, Apprenticeships**

Apprentice training: report on the Buxton press scheme. Brit. Printer, 76 (Aug 63) p.127-9. il.

**PRINTING, Board, Paper**

Paperboard quality and printing performance. Litho-Printer, 6 (Nov 63) p.770-1. ref.

**PRINTING, Books.** See BOOKS, Printing**PRINTING, Box-end, Packaging, Seamless stockings.** See

STOCKINGS, Seamless, Packaging, Box-end printing

**PRINTING, Cans, Food.** See FOOD, Cans, Printing**PRINTING, Cartons.** See CARTONS, Printing**PRINTING, Colour**

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**PRINTING, Colour, Advertisements, Newspapers.** See NEWSPAPERS, Advertisements, Printing, Colour**PRINTING, Colour, Blow moulded thermoplastics, Bottles.**

See BOTTLES, Thermoplastics, Blow moulded, Printing, Colour

**PRINTING, Colour, Four colour, Machines, Sheet fed rotary**

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**PRINTING, Colour, Two colour, Machines, Sheet fed rotary**

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**PRINTING, Colour photography.** See PHOTOGRAPHY, Colour, Printing**PRINTING, Continuous stationery.** See STATIONERY, Continuous, Printing**PRINTING, Control systems**

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**PRINTING, Cotton fabrics.** See FABRICS, Cotton, Printing**PRINTING, Design**

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**PRINTING, Design, Classification systems, Data recording, Architects' offices.** See ARCHITECTS, Offices, Data recording, Classification, Systems, Typography**PRINTING, Design, Post offices.** See POST OFFICES, Printing, Design**PRINTING, Design, Research**

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**PRINTING, Directories.** See DIRECTORIES, Printing**PRINTING, Documents, Banks.** See BANKS, Documents, Printing**PRINTING, Dry offset**

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**PRINTING, Edinburgh**

Edinburgh as a printing centre. Brit. Printer, 76 (Aug 63) p.108-11. il.

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**QUARTZ IODINE LAMPS**, Floodlighting, Sports grounds. See **SPORTS GROUNDS**, Floodlighting, Lamps, Quartz iodine

**QUARTZ-KAOLINITE-MICA.** See **KAOLINITE-MICA-QUARTZ**

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OPALS, Mining, Queensland

ROADS, Queensland

TIN, Mining, Queensland

TRAMWAYS, Brisbane

**QUEENSLAND NUTS.** See **MACADAMIA NUTS**

**QUENCH AGED IRON.** See **IRON**, Quench aged

**QUENCH AGEING**, Iron alloys. See **IRON**, Alloys, Ageing, Quench

**QUENCHED RESONANT CIRCUITS**, Detection, Signalling systems, H.F. radio teleprinting. See **RADIO**, Teleprinting, H.F., Signalling systems, Detection, Quenched resonant circuits

**QUENCHING**, Carburising. See **CARBURISING**, Quenching

**QUENCHING**, Effect on photoluminescence, Zinc sulphide-Copper. See **ZINC SULPHIDE-COPPER**, Photoluminescence, Effect of quenching

**QUENCHING**, Effect on slip planes, Iron-Aluminium. See **IRON-ALUMINIUM**, Slip planes, Effect of quenching

**QUENCHING**, Flames. See **FLAMES**, Quenching

**QUENCHING**, Flames, Combustion chambers. See **COMBUSTION CHAMBERS**, Flames, Quenching

**QUENCHING**, Fluidised baths, Pearlite, Malleable iron. See **IRON**, Malleable, Pearlite, Quenching, Fluidised baths

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**R.F.**, Heating, Curing, Adhesives, Wood manufactures. See **WOOD**, Manufactures, Adhesives, Curing, Heating, R.F.

**R.F.**, Heating, Drying, Wood. See **WOOD**, Drying, Heating, R.F.

**R.F.**, Heating, Lipping, Particle boards. See **PARTICLE BOARDS**, Lipping, Heating, R.F.

**R.F.**, Heating, Lipping, Wood, Flush doors. See **DOORS**, Flush, Wood, Lipping, Heating, R.F.

**R.F.**, Heating, Wood, Cabinet manufactures, Receivers, Radio. See **RADIO**, Receivers, Cabinets, Manufactures, Wood, Heating, R.F.

**R.F.**, Heating, Wood, Cabinet manufactures, Receivers, Television. See **TELEVISION**, Receivers, Cabinets, Manufactures, Wood, Heating, R.F.

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**R.T.**, Aircraft. See **AIRCRAFT**, Radio telephony

**RACING CARS**. See **MOTOR CARS** (Racing)

**RACK PISTON NUTS**, Steering assemblies, Motor cars. See **MOTOR CARS**, Steering assemblies, Nuts, Rack piston

**RACK RAILWAYS**. See **RAILWAYS**, Rack

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## RADAR

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RADOMES

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**RADAR, Doppler, Navigation systems, Helicopters**. See **HELICOPTERS**, Navigation systems, Radar, Doppler

**RADAR, Doppler, Traffic control, Air transport**. See **AIR TRANSPORT**, Traffic control, Radar, Doppler

**RADAR, Height measurement, Aircraft**. See **AIRCRAFT**, Height, Measurement, Radar

**RADAR, Hydrographic surveying**. See **HYDROGRAPHIC SURVEYING**, Radar

**RADAR, Incoherent scatter, Ionosphere research**. See **IONOSPHERE**, Research, Radar, Incoherent scatter

**RADAR, Ionosphere, Scatter, Radio waves**. See **RADIO**, Waves, Scatter, Ionosphere, Radar observation

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- RADIANT HEATING, Buildings.** See BUILDINGS, Heating, Radiant
- RADIANT HEATING, Industrial buildings.** See INDUSTRIAL BUILDINGS, Heating, Radiant
- RADIANT LIQUEFIED PETROLEUM GAS HEATING, Buildings.** See BUILDINGS, Heating, Liquefied petroleum gas, Radiant
- RADIANT PANELS, Electric ovens, Stoving, Paint.** See PAINT, Stoving, Ovens, Electric, Radiant panels
- RADIANT PANELS, Gas-fired heating.** See HEATING, Gas fired, Radiant panel
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- RADIATION THERMAL CRACKING, Paraffins.** See PARAFFINS, Radiation thermal cracking

**RADIATIONS**

## Related Headings:

COSMIC RAYS  
INFRA-RED RADIATION  
IRRADIATION  
RADIOACTIVITY  
RADIOGRAPHY  
ULTRAVIOLET RADIATION  
X-RAYS

**RADIATIONS, Dairy industry.** See DAIRY INDUSTRY, Radiations

**RADIATIONS, Hazards, Manned flights, Astronautics.** See ASTRONAUTICS, Flights, Manned, Hazards, Radiation

**RADIATIONS, Heat.** See HEAT, Radiation

**RADIATIONS, Heat, Components, Vehicles, Astronautics.** See ASTRONAUTICS, Vehicles, Components, Heat radiation

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**RADICALS, Free, Polymerisation, Ethylene.** See ETHYLENE, Polymerisation, Free radicals

**RADICALS, Free, Polymerisation, Stereo-regularity, Polymethyl methacrylate.** See POLYMETHYL METHACRYLATE, Stereo-regularity, Production, Polymerisation, Free radicals

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**RADIO**

## Related Headings:

CONTROL, Remote  
DIRECTION FINDING  
RADAR

**RADIO-SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*History**Transmission*

Waves  
Reflection phenomena  
Orbiting dipole belts

*Equipment*

Amplifiers  
Cavity resonators  
Mixers  
Stations  
Transmit - Receive switching  
Transmitters  
Receivers



# **RADIO—SUBHEADINGS—Synopsis—cont.**

## **Systems**

- Long wave
- L.F.
- H.F.
- V.H.F.
- U.H.F.
- S.H.F.
- Microwave
- Single sideband
- Frequency modulation
- Stereo
- Communication

## **Ancillaries**

- Studios

## **Applications**

- Telegraphy
- Teleprinting
- Pills

## **RADIO, Amplifiers**

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## **RADIO, Amplifiers, Linear**

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## **RADIO, Equipment**

Related Headings:  
AERIALS

## **RADIO, Equipment, Aircraft**

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## **RADIO, Equipment, Cabinets**

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RADIO, Equipment, Fire services. See FIRE SERVICES, Communications, Radio

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## **RADIO, Equipment (Flight control systems) Reliability**

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## **RADIO, Equipment, Inductors, Formers, Plastics**

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## **RADIO, Equipment, Layout**

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## **RADIO, Equipment, Light aircraft**

Radio aids for business flying. J. Fricker. *Aeroplane & Commercial Aviation News*, 105 (2 May 63) p.41-2

RADIO, Equipment, Police. See POLICE, Communications, Radio

## **RADIO, Equipment, Power supplies**

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## **RADIO, Equipment, Power supplies, Rectifiers, Diodes, Silicon**

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RADIO, H.F., Data transmission. See DATA TRANSMISSION, Radio, H.F.

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- RADIO, H.F., Waves, Reflection, Ionosphere, Phase characteristics**  
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- RADIO, Links, Atomic frequency standards comparison. See FREQUENCY, Standards, Atom, Comparison, Radio links**
- RADIO, Long wave, Transmitters, Aerials, Coupling networks**  
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SATELLITES, Artificial, Communication
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Related Headings:  
AERIALS, Horn
- RADIO, Microwave, Aerials, Towers, Concrete, Construction, Formwork**  
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- RADIO, Microwave, Aerials, Towers, Windows, Glass**  
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- RADIO, Microwave, Relay systems, Reliability**  
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- RADIO, Navigation, Fishing vessels. See FISHING, Vessels, Navigation, Radio**
- RADIO, Navigation systems, Aircraft. See AIRCRAFT, Navigation systems, Radio**
- RADIO, Navigation systems, Hovercraft. See HOVERCRAFT, Navigation systems, Radio**
- RADIO, Navigation systems, Light aircraft. See AIRCRAFT (Light) Navigation systems, Radio**
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RADIOMETER FORCES, Vacuum. See VACUUM, Radiometer forces

**RADIOMETERS**

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RADIOMETERS, Heat radiation, Venus. See VENUS, Heat radiation, Radiometers

RADIOMETERS, Millimetre wave frequency. See MILLIMETRE WAVE FREQUENCY, Radiometers

RADIOMETERS, Temperature measurement, Sea. See SEA, Temperature, Measurement, Radiometers

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RADON, Water purification. See WATER, Purification, Radon

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Inter-city diesel trains. *Railway Magazine*, 109 (Apr 63) p.274-6. il.

Inter-urban railcar of the future. *Diesel Railway Traction*, 17 (Aug 63) p.304-7. il. refs.

Western Region inter-city sets: Swindon built four-car trains for Cardiff, Birmingham and West of England services. *Diesel Railway Traction*, 17 (Apr 63) p.154-6. il.

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Details of railcars in Australia (summary) I. B. MacFarlane. *Diesel Railway Traction*, 16 (Dec 62) p.487

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Foamed cored panels for transport. *Rubber & Plastics Age*, 44 (May 63) p.499-500. il.

**RAILCARS, Diesel-electric**

Service experience with multiple-unit trains [British Railways, Southern Region] *Diesel Railway Traction*, 17 (Dec 63) p.477-9. il.

**RAILCARS, Diesel electric, Rack railways. See RAILWAYS, Rack, Railcars, Diesel electric****RAILCARS, Diesel-electric, Testing**

Diesel locomotive test plant [British Railways, Southern Region, Eastleigh] *Diesel Railway Traction*, 17 (Dec 63) p.462-7. il.

**RAILCARS, Diesel-electric, Yugoslavia**

Jugoslav express train sets. *Diesel Railway Traction*, 17 (Sep 63) p.362-3. il.

Jugoslav express train sets: four-car standard-gauge diesel electric sets of 800 h.p. for long-distance services. *Railway Gaz.*, 119 (6 Sep 63) p.269-70. il.

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Commuter coaches for Philadelphia. *Railway Gaz.*, 119 (2 Aug 63) p.126-7. il.

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**RAILCARS, Hungary**

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Overhauling 1300 railcars. *Oil Engine & Gas Turbine*, 31 (Mid Sep 63) p.33-4. ref.

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Tractive resistance and riding of railcars. J. L. Koffman. *Diesel Railway Traction*, 17 (Nov 63) p.428-32. il. refs.

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Related Headings:  
SHIPS (Train carrying)

**RAILWAY-FERRY SYSTEMS, Transport, Freight. See FREIGHT, Transport, Railway ferry systems****RAILWAYS**

Towards greater productivity on the railways. R. K. Ray. *J. of Instn. of Locomotive Engrs.*, 52 No.4 (1962-63) p.380-93

**RAILWAYS**

Related Headings:

ROLLING STOCK, Passenger, Railways  
ROLLING STOCK, Railways  
TRAINS

**RAILWAYS-SUBHEADINGS-Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

*History**Particular localities**Great Britain**England**Hertfordshire**Hayling Island**Plymouth-Launceston**Buxton**Stockport-Buxton**Isle of Man**Wales**Ffestiniog**Scotland**Inverness-Perth**Ireland**Sligo**Europe**France**Germany**Bentheim**Switzerland**Aigle**Bex**Spain**Norway**Bergen-Oslo**Hungary**Asia**Iran**India**Japan**Philippines**Luzon**Africa**Nigeria**Rhodesia**Nyasaland**Mozambique**North America**Mexico**West Indies**Jamaica**South America**Brazil**Museums**Education**Apprenticeships**Research**Laboratories**Problems**Accidents**Fires**Corrosion**Weeds**Design**Transport**Schedules**Timetables**Operation**Work study**Engineering**Equipment**Electronic equipment*

## RAILWAYS—SUBHEADINGS—Synopsis—cont.

Control systems  
Computers  
Communications  
    Telegraphy  
    Telephony  
    Television  
    Signalling systems  
Hoisting, Equipment  
    Cranes  
Vehicles  
    Wagons  
    Tracklayers  
Structures  
    Architecture  
    Stations  
    Bridges  
    Viaducts  
    Tunnels  
Facilities  
    Track, Switches  
    Level crossings  
    Marshalling yards

## Types

Narrow gauge  
Electric  
    Electrification  
Underground  
Rack

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Casualties lowest since war: summary of Chief Inspecting Officer of Railways report. D. McNullen. *Railway Gaz.*, 119 (29 Nov 63) p.595  
Ministry of Transport accident report: collision at Seven Kings, British Railways Eastern Region, January 23, 1963. *Railway Gaz.*, 119 (26 Jul 63) p.109  
Ministry of Transport accident report: collision near Lincoln, British Railways, Eastern Region, January 25, 1963. *Railway Gaz.*, 119 (16 Aug 63) p.175  
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Ministry of Transport accident report—derailment at Bethnal Green, British Railways, Eastern Region, June 17, 1962. *Railway Gaz.*, 118 (22 Mar 63) p.325  
Railway accidents. E. Labrum. *Permanent Way Instn. J.*, 80 pt.3 (1962) p.177-84  
Report on King's Langley collision. *Railway Gaz.*, 119 (15 Nov 63) p.541-2

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Future of railways in tropical Africa. Sir James R. Farquharson. *Instn. of Locomotive Engrs J.*, 53 pt.1 (1963-64) p.14-32. il. refs.

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Light railways of Aigle and Bex. P. J. Jacques & W. J. Wyse. *Modern Tramway*, 26 (Dec 63) p.421-35. il.

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Railways planning for the future. A. George Contractors' Record, (2 Jan 63) p.10+. il.

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Chepstow bridge reconstructed. *Railway Magazine*, 109 (Apr 63) p.240-4. il. ref.

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Expected life of girder-work. T. H. Turner. *Engineer*, 216 (1 Nov 63) p.738-9

166-ft single-span welded-plate girder bridge. *Railway Gaz.*, 119 (16 Aug 63) p.182-3. il.

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Reconstruction of Grosvenor Bridge. *Railway Magazine*, 109 (Aug 63) p.533+. il.

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Enter an Androcles. *Design* (Mar 63) p.43-4

New design for British Railways. *Railway Magazine*, 109 (Apr 63) p.234-9. il.

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MONORAILS

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**RAILWAYS, Marshalling yards, Retarders, Control systems**

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**READING MACHINES**

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**REAR AXLES (Lorries) Spindles, Extrusion, Cold**

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**REBREAKING, Spinning, Man-made fibres, Yarns.** See **YARNS, Man-made fibres, Spinning, Rebreaking**

**RECEIVERS, Colour television.** See **TELEVISION, Colour, Receivers**

**RECEIVERS, Continuous wave radar.** See **RADAR, Continuous wave, Receivers**

**RECEIVERS, Echo ranging.** See **ECHO RANGING, Receivers**

**RECEIVERS, H.F. radio.** See **RADIO, H.F., Receivers**

**RECEIVERS, L.F. radio.** See **RADIO, L.F., Receivers**

**RECEIVERS, Radio.** See **RADIO, Receivers**

**RECEIVERS, Radio, Navigation systems, Aircraft.** See **AIRCRAFT, Navigation systems, Radio, Receivers**

**RECEIVERS, Radio, Straight line travel aids, Blind people.** See **BLIND PEOPLE, Straight line travel aids, Radio, Receivers**

**RECEIVERS, Stereo radio.** See **RADIO, Stereo, Receivers**

**RECEIVERS, Television.** See **TELEVISION, Receivers**

**RECEIVERS, U.H.F. television.** See **TELEVISION, U.H.F., Receivers**

**RECEIVERS, V.H.F. radio.** See **RADIO, V.H.F., Receivers**

**RECEIVERS, Weather radar.** See **RADAR (Weather) Receivers**

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**RECEPTION HALLS (Breweries) Interior decoration**

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**RECIPROCATING MOVEMENTS, Crank drive, Paper converting machines.** See **PAPER, Converting, Machines, Reciprocating movements, Crank drive**

**RECIPROCATING WAVE HYDRAULIC TRANSMISSIONS.**

See **TRANSMISSIONS, Hydraulic, Reciprocating wave**

**RECIPROCITY FAILURE CURVES, Unsensitised emulsions, Photography.** See **PHOTOGRAPHY, Emulsions, Unsensitised, Reciprocity failure curves**

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**RECORDERS, Tape.** See **TAPE RECORDERS**

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**RECORDERS, Videotape.** See **VIDEOTAPE RECORDERS**

**RECORDING, Magnetic tracks, Sound films.** See **SOUND FILMS, Magnetic tracks, Recording**

**RECORDING, Sound.** See **SOUND, Recording**

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- RECRYSTALLISATION, Impact cold working, Aluminium. See ALUMINIUM, Cold working (Impact) Recrystallisation
- RECRYSTALLISED CHROMIUM. See CHROMIUM, Recrystallised

RECTANGULAR PLATES. See PLATES, Rectangular

RECTANGULAR PULSES. See PULSES, Rectangular

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RECTIFIERS, Diodes, Silicon, Power coaches, Electric trains. See TRAINS, Electric, Power coaches, Rectifiers, Diodes, Silicon

RECTIFIERS, Diodes, Silicon, Power supplies, Radio equipment. See RADIO, Equipment, Power supplies, Rectifiers, Diodes, Silicon

RECTIFIERS, Diodes, Silicon, Power supplies, Receivers, Television. See TELEVISION, Receivers, Power supplies, Rectifiers, Diodes, Silicon

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**RECTIFIERS, Silicon controlled, Power supplies, Telephone exchanges.** See **TELEPHONY, Automatic, Exchanges, Power supplies, Rectifiers, Silicon controlled**

**RECTIFIERS, Silicon controlled, Speed changers, D.C. motors, Machine tools.** See **MACHINE TOOLS, Electric motors, D.C., Speed changers, Rectifiers, Silicon controlled**

**RECTIFIERS, Silicon controlled, Switching circuits.** See **SWITCHING CIRCUITS, Rectifiers, Silicon controlled**

**RECTIFIERS, Silicon controlled, Switching circuits, Control systems, Induction motors.** See **ELECTRIC MOTORS, Induction, Control systems, Switching circuits, Rectifiers, Silicon controlled**

**RECTIFIERS, Silicon controlled, Switching circuits, Safety, Nuclear reactors.** See **NUCLEAR REACTORS, Safety, Switching circuits, Rectifiers, Silicon controlled**

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**REDDITCH**

See **TOWN PLANNING, Redditch**

**REDOX TITRATIONS, Organic chemicals determination.** See **ORGANIC CHEMICALS, Determination, Titrations, Redox**

**REDUCING SUGARS, Molasses.** See **MOLASSES, Reducing sugars**

**REDUCTION, Blister copper.** See **COPPER, Blister, Reduction**

**REDUCTION, Polyacrylamides, Aqueous solutions.** See **POLYACRYLAMIDES (Solutions, Aqueous) Reduction**

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**REED THATCHED ROOFS.** See **ROOFS, Thatched**

**REEDS, Looms.** See **LOOMS, Reeds**

**REEDS, Pulp.** See **PULP, Reed**

**REEL FEEDING, Paper converting machines.** See **PAPER, Converting, Machines, Reel feeding**

**REELS, Line fishing.** See **FISHING, Line, Reels**

**REELS, Paper.** See **PAPER, Reels**

**REELS, Paper, Printing.** See **PRINTING, Paper, Reels**

**REEMA SYSTEM, Prefabricated buildings.** See **BUILDINGS, Prefabricated, Reema system**

**REFINERIES, Petroleum.** See **PETROLEUM, Refineries**

**REFINERS, Pulp.** See **PULP, Refiners**

**REFINING, Electrolytic, Gold.** See **GOLD, Refining, Electrolytic**

**REFINING, Electrolytic, Silver.** See **SILVER, Refining, Electrolytic**

**REFINING, Electrolytic, Uranium.** See **URANIUM, Electrorefining**

**REFINING, Glass.** See **GLASS, Refining**

**REFINING, Iron.** See **IRON, Refining**

**REFINING, Liquid iron.** See **IRON, Liquid, Refining**

**REFINING, Papermaking.** See **PAPERMAKING, Refining**

**REFINING, Petroleum.** See **PETROLEUM, Refining**

**REFINING, Zone.** See **ZONE REFINING**

**REFLECTANCE, Infra-red spectrophotometers.** See **SPECTROPHOTOMETERS, Infra-red, Reflectance**

**REFLECTIVE MATERIALS, Road signs.** See **ROADS, Signs, Reflective materials**

**REFLECTIVITY, Coal.** See **COAL, Reflectivity**

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**REFLECTORS, Coherent light production.** See **LIGHT, Coherent, Production, Reflectors**

**REFLECTORS, Glass, Roads.** See **ROADS, Reflectors, Glass**

**REFLECTORS, Optical instruments.** See **OPTICAL INSTRUMENTS, Reflectors**

**REFLECTORS, Radio telescopes.** See **TELESCOPES, Radio, Aerials**

**REFLEX CAMERAS.** See **CAMERAS, Reflex**

**REFLEX MINIATURE CAMERAS.** See **CAMERAS, Miniature, Reflex**

**REFLEXION PRINTING, Photography.** See **PHOTOGRAPHY, Printing, Reflexion**

**REFLUX RATIO, Minimum, Distillation.** See **DISTILLATION, Minimum reflux ratio**

**REFORMING, Butane, Town gas production.** See **GAS (Town) Production, Butane, Reforming**

**REFORMING, Hydrocarbons, Town gas production.** See **GAS (Town) Production, Hydrocarbons, Reforming**

**REFORMING, Light petroleum distillates, Gas production.** See **GAS (Town) Production, Light petroleum distillates, Reforming**

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BORIDE Z

BORIDES

CERMETS

CHROME-MAGNESITE, Refractories

COPPER OXIDE-SILICON DIOXIDE

DOLOMITE, Refractories



## REFRACTORIES

Related Headings—cont.

FIRECLAY  
HIGH TEMPERATURE  
MAGNESITE  
MAGNESIUM OXIDE  
MULLITE  
NITRIDES, Refractories  
OXIDES, Refractories  
PERICLASE-MONTICELLITE  
SILICA, Refractories  
SILICA, Unfired, Refractories  
SILICON CARBIDE, Silicon oxynitride bonded

## REFRACTORIES—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## History

Particular countries  
*Russia*

Research  
*Laboratories*

*Mechanical properties*  
*Elastic moduli*

Chemistry  
*Reactions with slags*

Technical activities  
*Production*  
*Drying*

## Raw materials

Kinds  
*Bonded*  
*Coatings*  
Kinds by material  
*High-alumina*  
Applications  
*Engineering materials*  
*Electrical engineering*

## REFRACTORIES, Elastic moduli, Resonance frequency measurement

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REFRACTORIES, Furnaces, Steel production. See STEEL, Production, Furnaces, Refractories

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REFRACTORIES, Arc furnaces, Steel production. See STEEL, Production, Furnaces, Arc, Refractories

REFRACTORIES, Basic, Electric furnaces. See FURNACES, Electric, Refractories, Basic

REFRACTORIES, Blast furnaces. See FURNACES, Blast, Refractories

REFRACTORIES, Boilers. See BOILERS, Refractories

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**REFRACTORIES, Slagging gasifiers, Boilers, Power stations.** See **POWER STATIONS**, Boilers, Gasifiers, Slagging, Refractories

**REFRACTORIES, Tanks, Melting, Glass.** See **GLASS**, Melting, Tanks, Refractories

**REFRACTORY METALS.** See **METALS**, Refractory

**REFRIGERANTS**

Related Headings:

CHLOROFLUOROHYDROCARBONS, Refrigerants

NITROGEN, Liquid, Refrigerants

**REFRIGERANTS, Boiling, Heat transfer**

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**RIVERS, Pollution, Self purification**

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**ROAD RESEARCH LABORATORY**

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**ROAD ROLLERS**

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**ROAD ROLLERS, Transmissions, Hydrostatic**

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ROAD TANKERS. See TANKERS, Road

ROAD TANKERS, Transport, Beer. See BEER, Transport, Road tankers

ROAD TANKERS, Transport, Liquid ethylene. See

ETHYLENE, Liquid, Transport, Road tankers

ROAD TANKERS, Transport, Oil, Transformers. See

TRANSFORMERS, Oil, Transport, Road tankers

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ROAD TESTS, A.E.C. Mandator-Scammell articulated vehicles.

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Mandator-Scammell, Road Tests

ROAD TESTS, A.J.S. Hurricane motor cycles. See MOTOR CYCLES, Types, A.J.S. Hurricane, Road tests

ROAD TESTS, Alfa-Romeo 2600 cars. See MOTOR CARS, Types, Alfa-Romeo 2600, Road tests

ROAD TESTS, Alfa Romeo Giulia 1600 Sprint cars. See MOTOR CARS, Types, Alfa Romeo Giulia 1600 Sprint, Road tests

ROAD TESTS, Alfa Romeo Giulia TI cars. See MOTOR CARS, Types, Alfa Romeo Giulia TI, Road tests

ROAD TESTS, Ariel Leader motor cycles. See MOTOR CYCLES, Types, Ariel Leader, Road tests

ROAD TESTS, Austin 1100 de Luxe cars. See MOTOR CARS, Types, Austin 1100 de Luxe, Road tests

ROAD TESTS, Austin A40 Mk2 de luxe cars. See MOTOR CARS, Types, Austin A40 Mk2 de luxe, Road tests



- ROAD TESTS, Austin A110 Westminster cars. See MOTOR CARS, Types, Austin A110 Westminster, Road tests
- ROAD TESTS, Austin A35 vans. See VANS, Types, Austin A35, Road tests
- ROAD TESTS, Austin FF K360-Brockhouse KS 1282 articulated vehicles. See MOTOR VEHICLES, Articulated, Types, Austin FF K360-Brockhouse KS 1282, Road tests
- ROAD TESTS, Austin FH 7-ton lorries. See LORRIES, Types, Austin FH 7-ton, Road tests
- ROAD TESTS, Austin-Healey 3000 cars. See MOTOR CARS, Types, Austin-Healey 3000, Road tests
- ROAD TESTS, Austin Mini-Cooper S cars. See MOTOR CARS, Types, Austin Mini-Cooper S, Road tests
- ROAD TESTS, Austin Mini Super de Luxe cars. See MOTOR CARS, Types, Austin Mini Super de Luxe, Road tests
- ROAD TESTS, B.M.W. 1800 Saloon cars. See MOTOR CARS, Types, B.M.W. 1800 Saloon, Road tests
- ROAD TESTS, B.M.W.R50 motor cycles. See MOTOR CYCLES, Types, B.M.W. R50, Road tests
- ROAD TESTS, B.S.A. A10 Rocket Gold Star motor cycles. See MOTOR CYCLES, Types, B.S.A. A10 Rocket Gold Star, Road tests
- ROAD TESTS, B.S.A. A65 Star motor cycles. See MOTOR CYCLES, Types, B.S.A. A65 Star, Road tests
- ROAD TESTS, Bedford-Duple Vega Major motor coaches. See MOTOR COACHES, Types, Bedford-Duple Vega Major, Road tests
- ROAD TESTS, Bentley cars. See MOTOR CARS, Types, Bentley, Road tests
- ROAD TESTS, Bond Equipe G.T. cars. See MOTOR CARS, Types, Bond Equipe G.T., Road tests
- ROAD TESTS, Bultaco Metralla motor cycles. See MOTOR CYCLES, Types, Bultaco Metralla, Road tests
- ROAD TESTS, Cars. See MOTOR CARS, Road tests
- ROAD TESTS, Chevrolet Corvette Sting Ray cars. See MOTOR CARS, Types, Chevrolet Corvette Sting Ray, Road tests
- ROAD TESTS, Chrysler Plymouth Fury cars. See MOTOR CARS, Types, Chrysler Plymouth Fury, Road tests
- ROAD TESTS, Chrysler Valiant V200 cars. See MOTOR CARS, Types, Chrysler Valiant V200, Road tests
- ROAD TESTS, Citroen DS cars. See MOTOR CARS, Types, Citroen DS, Road tests
- ROAD TESTS, Citroen ID conversions, Motor cars. See MOTOR CARS, Types, Citroen ID, Conversions, Road tests
- ROAD TESTS, Citroen Safari cars. See MOTOR CARS, Types, Citroen Safari, Road tests
- ROAD TESTS, Commer motor caravans. See MOTOR CARAVANS, Types, Commer, Road tests
- ROAD TESTS, Commer VAAS series lorries. See LORRIES, Types, Commer VAAS series, Road tests
- ROAD TESTS, Commercial vehicles. See VEHICLES, Commercial, Road tests
- ROAD TESTS, Csepel Pannonia motor cycles. See MOTOR CYCLES, Types, Csepel Pannonia, Road tests
- ROAD TESTS, DAF lorries. See LORRIES, Types, DAF, Road tests
- ROAD TESTS, Daimler Limousine cars. See MOTOR CARS, Types, Daimler Limousine, Road tests
- ROAD TESTS, Daimler V-8 Saloon cars. See MOTOR CARS, Types, Daimler V-8 Saloon, Road tests
- ROAD TESTS, Dennis Pax V commercial vehicles. See VEHICLES, Commercial, Types, Dennis Pax V, Road tests
- ROAD TESTS, Dodge 14-ton lorries. See LORRIES, Types, Dodge 14-ton, Road tests
- ROAD TESTS, Dové GTR4 cars. See MOTOR CARS, Types, Dové GTR4, Road tests
- ROAD TESTS, E.R.F. lorries. See LORRIES, Types, E.R.F., Road tests
- ROAD TESTS, E.R.F. 64GX3-Highway 1602R articulated vehicles. See MOTOR VEHICLES, Articulated, Types, E.R.F. 64GX3-Highway 1602R, Road tests
- ROAD TESTS, Fairthorpe Rockette cars. See MOTOR CARS, Types, Fairthorpe Rockette, Road tests
- ROAD TESTS, Fiat 1100T lorries. See LORRIES, Types, Fiat 1100T, Road tests
- ROAD TESTS, Fiat 2300 estate cars. See ESTATE CARS, Types, Fiat 2300, Road tests
- ROAD TESTS, Fiat 500D cars. See MOTOR CARS, Types, Fiat 500D, Road tests
- ROAD TESTS, Foden lorries. See LORRIES, Types, Foden, Road tests
- ROAD TESTS, Ford Consul Capri GT cars. See MOTOR CARS, Types, Ford Consul Capri GT, Road tests
- ROAD TESTS, Ford Consul Corsair de luxe cars. See MOTOR CARS, Types, Ford Consul Corsair de luxe, Road tests
- ROAD TESTS, Ford Consul Corsair G.T. cars. See MOTOR CARS, Types, Ford Consul Corsair G.T., Road tests
- ROAD TESTS, Ford Consul Cortina GT motor cars. See MOTOR CARS, Types, Ford Consul Cortina GT, Road tests
- ROAD TESTS, Ford Consul Cortina Lotus cars. See MOTOR CARS, Types, Ford Consul Lotus, Road tests
- ROAD TESTS, Ford Consul Cortina Super 1500 cars. See MOTOR CARS, Types, Ford Consul Cortina Super 1500, Road tests
- ROAD TESTS, Ford Cortina estate cars. See ESTATE CARS, Types, Ford Cortina, Road tests
- ROAD TESTS, Ford Cortina Super estate cars. See ESTATE CARS, Types, Ford Cortina Super, Road tests
- ROAD TESTS, Ford Falcon Sprint Convertible cars. See MOTOR CARS, Types, Ford Falcon Sprint Convertible, Road tests
- ROAD TESTS, Ford Galaxie 500 cars. See MOTOR CARS, Types, Ford Galaxie 500, Road tests
- ROAD TESTS, Ford Thames Trader lorries. See LORRIES, Types, Ford Thames Trader, Road tests
- ROAD TESTS, Ford Thames Trader-York DW2 articulated vehicles. See MOTOR VEHICLES, Articulated, Types, Ford Thames Trader-York DW2, Road tests
- ROAD TESTS, Ford Zephyr 6 cars. See MOTOR CARS, Types, Ford Zephyr 6, Road tests
- ROAD TESTS, Ford Zephyr 6 estate cars. See ESTATE CARS, Types, Ford Zephyr 6, Road tests
- ROAD TESTS, Francis Barnett Sports Fulmar motor cycles. See MOTOR CYCLES, Types, Francis Barnett Sports Fulmar, Road tests
- ROAD TESTS, Greeves 24 MDS motor cycles. See MOTOR CYCLES, Types, Greeves, 24 MDS, Road tests
- ROAD TESTS, Greeves 25DD "Essex Twin" motor cycles. See MOTOR CYCLES, Types, Greeves 25DD "Essex Twin", Road tests
- ROAD TESTS, Greeves Essex Twin motor cycles. See MOTOR CYCLES, Types, Greeves Essex Twin, Road tests
- ROAD TESTS, Guzzi Lodola motor cycles. See MOTOR CYCLES, Types, Guzzi Lodola, Road tests
- ROAD TESTS, Hillman Husky series 3 cars. See ESTATE CARS, Types, Hillman Husky Series 3, Road tests
- ROAD TESTS, Hillman Imp de luxe cars. See MOTOR CARS, Types, Hillman Imp de luxe, Road tests
- ROAD TESTS, Hillman Minx Series V cars. See MOTOR CARS, Types, Hillman Minx Series V, Road tests
- ROAD TESTS, Honda CB 77 Super motor cycles. See MOTOR CYCLES, Types, Honda CB 77 Super Sport, Road tests
- ROAD TESTS, Honda CB 92 motor cycles. See MOTOR CYCLES, Types, Honda CB 92, Road tests
- ROAD TESTS, Humber Hawk 3 cars. See MOTOR CARS, Types, Humber Hawk 3, Road tests

- ROAD TESTS, Humber Sceptre cars. See MOTOR CARS, Types, Humber Sceptre, Road tests
- ROAD TESTS, Jaguar E-type cars. See MOTOR CARS, Types, Jaguar E-type, Road tests
- ROAD TESTS, Jaguar 3.8 Mk.2 cars. See MOTOR CARS, Types, Jaguar 3.8 Mk. 2, Road tests
- ROAD TESTS, Jaguar Mk. 10 cars. See MOTOR CARS, Types, Jaguar Mk. 10, Road tests
- ROAD TESTS, Jensen C-V8 cars. See MOTOR CARS, Types, Jensen C-V8, Road tests
- ROAD TESTS, Lagonda cars. See MOTOR CARS, Types, Lagonda, Road tests
- ROAD TESTS, Leyland Badger-Scammell tandem axle articulated vehicles. See MOTOR VEHICLES, Articulated, Types, Leyland Badger-Scammell tandem axle, Road tests
- ROAD TESTS, Leyland Comet lorries. See LORRIES, Types, Leyland Comet, Road tests
- ROAD TESTS, Leyland Retriever commercial vehicles. See VEHICLES, Commercial, Types, Leyland Retriever, Road tests
- ROAD TESTS, Leyland 20 vans. See VANS, Types, Leyland 20, Road tests
- ROAD TESTS, Lotus Elite cars. See MOTOR CARS, Types, Lotus Elite, Road tests
- ROAD TESTS, Lotus Super Seven (1500) cars. See MOTOR CARS, Types, Lotus Super Seven (1500) Road tests
- ROAD TESTS, MG Midget cars. See MOTOR CARS, Types, M.G. Midget, Road tests
- ROAD TESTS, M.G. Midget P-Type cars. See MOTOR CARS, Types, M.G. Midget P-Type, Road tests
- ROAD TESTS, Maserati 3500 GTI Sebring cars. See MOTOR CARS, Types, Maserati 3500 GTI Sebring, Road tests
- ROAD TESTS, Matchless Monitor Super Sports motor cycles. See MOTOR CYCLES, Types, Matchless Monitor Super Sports, Road tests
- ROAD TESTS, Mercedes-Benz 130H cars. See MOTOR CARS, Types, Mercedes-Benz 130H, Road tests
- ROAD TESTS, Mercedes-Benz 190C cars. See MOTOR CARS, Types, Mercedes-Benz 190C, Road tests
- ROAD TESTS, Mercedes-Benz 220 SE cars. See MOTOR CARS, Types, Mercedes-Benz 220 SE, Road tests
- ROAD TESTS, Mercedes-Benz 300 SE cars. See MOTOR CARS, Types, Mercedes-Benz 300 SE, Road tests
- ROAD TESTS, Morris 1000 cars. See MOTOR CARS, Types, Morris 1000, Road tests
- ROAD TESTS, Morris 1100 cars. See MOTOR CARS, Types, Morris 1100, Road tests
- ROAD TESTS, Morris FG Lorries. See LORRIES, Types, Morris FG, Road tests
- ROAD TESTS, Morris Mini Cooper S cars. See MOTOR CARS, Types, Morris Mini Cooper S, Road tests
- ROAD TESTS, Morris Oxford Series VI cars. See MOTOR CARS, Types, Morris Oxford Series VI, Road tests
- ROAD TESTS, Motor cycles. See MOTOR CYCLES, Road tests
- ROAD TESTS, NSU Sport Prinz cars. See MOTOR CARS, Types, NSU Sport Prinz, Road tests
- ROAD TESTS, Norton Jubilee motor cycles. See MOTOR CYCLES, Types, Norton Jubilee, Road tests
- ROAD TESTS, Norton "Navigator" motor cycles. See MOTOR CYCLES, Types, Norton "Navigator", Road tests
- ROAD TESTS, Panther 120 motor cycles. See MOTOR CYCLES, Types, Panther 120, Road tests
- ROAD TESTS, Peugeot 404 cars. See MOTOR CARS, Types, Peugeot 404, Road tests
- ROAD TESTS, Peugeot 404 estate cars. See ESTATE CARS, Types, Peugeot 404, Road tests
- ROAD TESTS, Puch SVS motor cycles. See MOTOR CYCLES, Types, Puch SVS, Road tests
- ROAD TESTS, Rambler Classic cars. See MOTOR CARS, Types, Rambler Classic, Road tests
- ROAD TESTS, Reliant Regal 3/25 three-wheelers cars. See MOTOR CARS, Three-wheelers, Types, Reliant 'Regal 3/25', Road tests
- ROAD TESTS, Renault Floride Caravelle cars. See MOTOR CARS, Types, Renault Floride Caravelle, Road tests
- ROAD TESTS, Renault 4L estate cars. See ESTATE CARS, Types, Renault 4L, Road tests
- ROAD TESTS, Renault Fourgon R.2104 vans. See VANS, Types, Renault Fourgon R.2104, Road tests
- ROAD TESTS, Renault R8 cars. See MOTOR CARS, Types, Renault R8, Road tests
- ROAD TESTS, Riley Elf Mk.2 cars. See MOTOR CARS, Types, Riley Elf Mk.2, Road tests
- ROAD TESTS, Rolls Royce Silver Cloud 3 cars. See MOTOR CARS, Types, Rolls Royce Silver Cloud 3, Road tests
- ROAD TESTS, Rover 110 cars. See MOTOR CARS, Types, Rover 110, Road tests
- ROAD TESTS, Rover 3 litre Coupé cars. See MOTOR CARS, Types, Rover 3 litre Coupé, Road tests
- ROAD TESTS, Rover 2000 cars. See MOTOR CARS, Types, Rover 2000, Road tests
- ROAD TESTS, Royal Enfield Turbo Twin motor cycles. See MOTOR CYCLES, Types, Royal Enfield Turbo Twin, Road tests
- ROAD TESTS, Saab 95 estate cars. See ESTATE CARS, Types, Saab 95, Road tests
- ROAD TESTS, Saab 96 cars. See MOTOR CARS, Types, Saab 96, Road tests
- ROAD TESTS, Scammell Routeman mk. 2 lorries. See LORRIES, Types, Scammell Routeman mk. 2, Road tests
- ROAD TESTS, Scania-Vabis commercial vehicles. See VEHICLES, Commercial, Types, Scania-Vabis, Road tests
- ROAD TESTS, Scania-Vabis L56 lorries. See LORRIES, Types, Scania-Vabis L56, Road tests
- ROAD TESTS, Scania-Vabis LS76 Super lorries. See LORRIES, Types, Scania-Vabis LS76 Super, Road tests
- ROAD TESTS, Seddon articulated motor vehicles. See MOTOR VEHICLES, Articulated, Types, Seddon, Road tests
- ROAD TESTS, Sidecars, Motor cycles. See MOTOR CYCLES, Sidecars, Road tests
- ROAD TESTS, Simca 1000 Special cars. See MOTOR CARS, Types, Simca 1000 Special, Road tests
- ROAD TESTS, Simca 1300 GL cars. See MOTOR CARS, Types, Simca 1300 GL, Road tests
- ROAD TESTS, Singer Nine Le Mans cars. See MOTOR CARS, Types, Singer Nine Le Mans, Road tests
- ROAD TESTS, Singer Vogue 2 cars. See MOTOR CARS, Types, Singer Vogue 2, Road tests
- ROAD TESTS, Skoda Octavia Super cars. See MOTOR CARS, Types, Skoda Octavia Super, Road tests
- ROAD TESTS, Standard-Triumph 15 vans. See VANS, Types, Standard-Triumph 15, Road tests
- ROAD TESTS, Standard-Triumph Herald 12/50 cars. See MOTOR CARS, Types, Standard-Triumph Herald 12/50, Road tests
- ROAD TESTS, Standard-Triumph Vitesse cars. See MOTOR CARS, Types, Standard-Triumph Vitesse, Road tests
- ROAD TESTS, Sunbeam Alpine Series 3 GT cars. See MOTOR CARS, Types, Sunbeam Alpine Series 3 GT, Road tests
- ROAD TESTS, Sunbeam Alpine Series 3 Sports Tourer cars. See MOTOR CARS, Types, Sunbeam Alpine Series 3 Sports Tourer, Road tests
- ROAD TESTS, Suzuki T10 motor cycles. See MOTOR CYCLES, Types, Suzuki T10, Road tests
- ROAD TESTS, Tippers. See TIPPERS, Road tests
- ROAD TESTS, Triumph Sports Cub motor cycles. See MOTOR CYCLES, Types, Triumph Sports Cub, Road tests

ROAD TESTS, Triumph Thunderbird motor cycles. See MOTOR CYCLES, Types, Triumph, Thunderbird, Road tests

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ROAD TESTS, Vauxhall VX4/90 cars. See MOTOR CARS, Types, Vauxhall VX4/90, Road tests

ROAD TESTS, Vauxhall Victor de luxe cars. See ESTATE CARS, Types, Vauxhall Victor de luxe, Road tests

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ROAD TESTS, Vauxhall Viva de luxe cars. See MOTOR CARS, Types, Vauxhall Viva de luxe, Road tests

ROAD TESTS, Victory-Jonckheere motor coaches. See MOTOR COACHES, Types, Victory-Jonckheere, Road tests

ROAD TESTS, Volkswagen 1200 cars. See MOTOR CARS, Types, Volkswagen 1200, Road tests

ROAD TESTS, Volkswagen 1500 estate cars. See ESTATE CARS, Types, Volkswagen 1500, Road tests

ROAD TESTS, Volvo 121 estate cars. See ESTATE CARS, Types, Volvo 121, Road tests

ROAD TESTS, Wolseley Hornet cars. See MOTOR CARS, Types, Wolseley Hornet, Road tests

ROAD TESTS, Yamaha YA5 motor cycles. See MOTOR CYCLES, Types, Yamaha YA5, Road tests

ROAD TESTS, Yamaha YDS2 "250 Sports" motor cycles. See MOTOR CYCLES, Types, Yamaha YDS2 "250 Sports", Road tests

## ROADS

Highway engineering from the user's point of view. R. Baxter. J. of Instr. of Highway Engrs., 10 (Apr 63) p.97-106

Priorities for road improvement. D. J. Reynolds. Traffic Engng & Control, 5 (Aug 63) p.240-2. refs.

## ROADS

Related Headings:

- FLYOVERS
- FOOTWAYS
- MOTORWAYS
- STREETS
- TRAFFIC ENGINEERING
- UNDERPASSES

## ROADS—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

### Particular localities

- Great Britain
- South Eastern England
  - Middlesex
- Western England
  - Wiltshire
  - Gloucestershire
  - Somerset
  - Devon
    - Exeter
- Midlands
  - Derbyshire
  - Nottinghamshire
    - Nottingham
    - Newark
  - Lincolnshire
    - Laceby

## ROADS—SUBHEADINGS—Synopsis—cont.

- Northern England
  - Cheshire
  - Yorkshire
    - West Riding
    - North Riding
      - Boroughbridge
  - Lancashire
    - Bolton
- Scotland
  - Angus
    - Dundee
  - Dumfriess-shire
    - Lockerbie
  - Lanarkshire
- Wales
  - South Wales
- Europe
  - Belgium
  - Netherlands
  - Germany
    - Rhineland
- Africa
  - Ghana
- North America
  - U.S.A.
    - Kentucky
- Australia
  - Queensland

### Research

### Specifications

### Properties

- Temperature

### Technical activities

- Design
- Surveying
- Conversion from...
- Landscaping
- Maintenance
- Drilling
- Heating
- Cleansing
- Snow clearance

### Materials

- Stone
  - Limestone
- Coral
- Concrete
- Soil
  - Subsoils

### Structural elements

- Bases
- Surfaces

### Plan & design elements

- Curves
- Fences
- Edgelines
- White lines
- Intersections
- T-Junctions
- Roundabouts
- Cycle tracks
- Signs
- Reflectors

### Types of roads

- Stabilised soil



## ROADS—SUBHEADINGS—Synopsis—cont.

Elevated  
By passes

Road use  
Town planning  
Transport  
Haulage  
Traffic  
Safety  
Speed limits

**ROADS, Bases, Elastic moduli, Determination**

Following changes in the properties of road bases and sub-bases by the surface wave propagation method. R. Jones. Civil Engng. & Public Works Rev., 58 (May 63) p.613+. refs.

Following changes in the properties of road bases and sub-bases by the surface wave propagation method, pt.2. R. Jones. Civil Engng. & Public Works Rev., 58 (Jun 63) p.777-80. il. ref.

**ROADS, Belgium**

Dutch and Belgians progress with national and city motorways. Contract J., 194 (18 Jul 63) p.309+. il.

Highway and traffic developments in Holland and Belgium. Surveyor, 122 (6 Jul 63) p.857-8. il.

Motorways in Holland & Belgium. Builder, 205 (30 Aug 63) p.431-2. il.

**ROADS, Bolton**

Inner relief road, Bolton. C. L. Case. Traffic Engng. & Control, 4 (Mar 63) p.620-2. il.

**ROADS, Boroughbridge**

Completion of North Riding's £1.65 million Boroughbridge By-pass: 29 miles of continuous dual carriageways. Contract J., 196 (28 Nov 63) p.461+. il.

Direct labour construction on trunk road A.1: Boroughbridge by-pass completes 29 miles of dual carriageway in North Riding. Surveyor, 122 (30 Nov 63) p.1507-8. il.

**ROADS, By-passes**

Economics of by-passes. D. J. Reynolds. Roads & Road Construction, 41 (Jul 63) p.204-5. il.

**ROADS, Cleansing, Vehicles**

Small answer to a big problem. J. F. Moon. Commercial Motor, 117 (14 Jun 63) p.70-3. il.

Streamlined street cleansing and trade waste collection. P. A. C. Brockington. Commercial Motor, 117 (14 Jun 63) p.74-7. il.

**ROADS, Cleansing, Vehicles, Brushes**

Brush revolution may continue another decade. J. P. Horton. Municipal Engng., 140 (18 Oct 63) p.1633-4. il.

**ROADS, Concrete**

America—a generation in advance. D. R. Sharp. Highways & Bridges & Engng. Works, 31 (28 Aug 63) p.12+. il.

Concrete road and runway design. G. C. Gracey. Consulting Engr., 24 (Oct 63) p.429+. il.

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Trends in research at the Road Research Laboratory.

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**ROADS, Concrete, Construction, Equipment**

Development story of the Weldall Ammann paver. Municipal Engng., 140 (6 Sep 63) p.1360-1. il.

**ROADS, Concrete, Costs**

Economics of concrete road & motorway construction. A. Shaw. Roads & Road Construction, 41 (Nov 63) p.365-7

**ROADS, Concrete, Cutting, Saws, Diamond impregnated**

Slip form process of concrete laying hastens European road construction. Industrial Diamond Rev., 23 (Mar 63) p.66-7. il.

**ROADS, Concrete, Great Britain**

Construction of major concrete roads in Great Britain, 1955-60. L. S. Blake & K. M. Brook. J. of Instn. of Highway Engrs., 10 (Jan 63) p.31-53. il. refs.

**ROADS, Concrete, Joints (Expansion) Sealants**

Full scale tests of materials for sealing expansion joints in concrete roads. P. J. F. Wright. Roads & Road Construction, 41 (May 63) p.138-46. il. refs.

**ROADS, Concrete, Overlays, Water bound macadam, Shear design**

Shear design of flexible W.B.M. overlay over badly cracked concrete pavement. R. K. Ghosh. Civil Engng. & Public Works Rev., 58 (Nov 63) p.1401-4. il. refs.

**ROADS, Concrete, Prestressed**

Prestressed concrete road. F. Panchaud. Consulting Engr., 23 (Feb 63) p.170-1. il.

Prestressed concrete road (contd.) F. Panchaud. Consulting Engr., 23 (Mar 63) p.317-18. il.

**ROADS, Concrete, Reinforced**

Concrete: properties, mix design, quality control, compressive strength, making concrete. J. Singleton-Green. Cement, Lime & Gravel, 38 (Oct 63) p.323-6. refs.

Materials: cement, aggregate, water, admixtures, reinforcement. J. Singleton-Green. Cement, Lime & Gravel, 38 (Aug 63) p.255-9. il. refs.

Reinforced concrete pavement: current construction practice and its problems. F. G. Carter. Highways & Bridges & Engng. Works, 31 (28 Aug 63) p.16+. il.

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**ROADS, Transport, Glassware. See GLASSWARE, Transport, Roads****ROADS, Transport, Grain. See GRAIN, Road transport****ROADS, Transport, Iron ores. See IRON, Ores, Transport, Roads****ROADS, Transport, Liquefied petroleum gas. See GAS, Liquefied petroleum, Transport, Road****ROADS, Transport, Mechanical handling**

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GRANITE

PETROLOGY

STONE

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**RONEY NICKEL CATALYST, Sulphur, Determination, Toluene. See TOLUENE, Determination of sulphur, Roney nickel catalyst****RONGAL A, Flash ageing, Printing, Fabrics. See FABRICS, Printing, Flash ageing, Rongal A****ROOF RESTAURANTS, Hotels. See HOTELS, Restaurants, Roof****ROOF VENTILATION, Factories. See FACTORIES, Ventilation, Roof****ROOFING**

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**RUBBER**

Related Headings:  
GUTTA PERCHA  
LATEX

**RUBBER—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

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Patents  
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Embrittlement  
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Physical & chemical aspects  
Mechanical properties  
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**RUBBER—SUBHEADINGS—Synopsis—cont.**

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Reclamation  
Bulk handling  
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Antioxidants  
Antiozonants

Kinds of rubber  
Phenolic resin reinforced  
Synthetic

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**SAFETY, Nuclear reactors.** See **NUCLEAR REACTORS, Safety**

**SAFETY, Papermaking.** See **PAPERMAKING, Safety**

**SAFETY, Pipelines, Natural gas.** See **GAS, Natural, Pipelines, Safety**

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## SAN PEDRO

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*Orbits*

*Environment*

*Technical activities*

*Control*

*Attitude control*

*Tracking*

*Parts & equipment*

*Heat shields*

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*Balloon*

*Synchronous*

*By function*

*Communication*

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*Meteorology*

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- SATELLITES, Artificial, Communication, Data transmission, Composing, Printing, Newspapers.** See NEWSPAPERS, Printing, Composing, Data transmission, Communication satellites

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**SHAFTS**

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TAILSHAFTS

SHAFTS, Coal mining. See COAL, Mining, Shafts

SHAFTS, Diesel engines, Ships. See SHIPS, Diesel engines, Shafts

SHAFTS, Engines, Ships. See SHIPS, Engines, Shafts

**SHAFTS, Hardening, Induction, Machines**

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**SHAFTS, "O" rings**

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SHAFTS, Propellers, Ships. See SHIPS, Propellers, Shafts

SHAFTS, Pumped storage hydroelectric power stations. See HYDROELECTRIC POWER STATIONS, Pumped storage, Shafts

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SHEAR DESIGN, Water bound macadam overlays, Concrete roads. See ROADS, Concrete, Overlays, Water bound macadam, Shear design

SHEAR FRACTURE, Silicone fluids. See SILICONES, Fluids, Fracture, Shear

SHEAR LOADING, Bending, Beams. See BEAMS, Bending, Shear loading

SHEAR LOADING, Buckling, Rectangular plates. See PLATES, Rectangular, Buckling, Shear

**SHEAR MOULDS**

Related Headings:

PENDULUMS, Torsion

SHEAR PLATE JOINTS, Precast concrete, Columns. See COLUMNS, Concrete, Precast, Joints, Shear plate



**SHEAR RESISTANCE**, Horizontal, Composite beams. *See* BEAMS, Composite, Horizontal shear resistance

**SHEAR STRENGTH**, Volcanic soil, Foundations, Tall buildings. *See* BUILDINGS, Tall, Foundations, Soil, Volcanic Shear strength

**SHEAR STRESSES**, Concrete slabs, Decks, Bridges. *See* BRIDGES, Decks, Slabs, Concrete, Shear stresses

**SHEAR STRESSES**, Creep, Metals. *See* METALS, Creep, Shear stress

**SHEAR STRESSES**, Cutting, Metals. *See* METALS, Cutting, Shear stress

**SHEAR STRESSES**, Reinforced concrete beams. *See* BEAMS, Concrete, Reinforced, Shear stresses

**SHEAR STRESSES**, Walls, Turbulent flow, Pipes. *See* PIPES, Flow, Turbulent, Wall shear stress

**SHEAR TESTS**, Epoxy resin joints, Precast concrete beams. *See* BEAMS, Concrete, Precast, Joints, Epoxy resin, Testing, Shear

**SHEAR TESTS**, Fatigue, Single crystals, Magnesium. *See* MAGNESIUM, Crystals, Single, Fatigue tests, Shear

**SHEAR TESTS**, Reinforced concrete, Beams. *See* BEAMS, Concrete, Reinforced, Shear tests

**SHEAR TESTS**, Triaxial, Consolidated clay, Soil. *See* SOIL, Clay, Consolidated, Shear tests, Triaxial

**SHEARER LOADERS**, Coal mining. *See* COAL, Mining, Shearer loaders

**SHEARERS**, Coal mining. *See* COAL, Mining, Shearers

**SHEARERS**, Waste thread, Fabrics. *See* FABRICS, Waste thread shearers

**SHEARING**, Billets. *See* BILLETS, Shearing

**SHEARING**, Metals. *See* METALS, Shearing

**SHEARS**, Scrap iron. *See* IRON, Scrap, Shears

**SHEATHING**, Copper conductors. *See* CONDUCTORS, Electrical, Copper, Sheathing

**SHEATHING**, Electric cables. *See* CABLES, Electric, Sheathing

**SHEDS**, Storage, Potatoes. *See* POTATOES, Storage, Sheds

**SHEDS**, Wood storage. *See* WOOD, Storage, Sheds

## SHEEP

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**SHEET FED OFFSET LITHOGRAPHY**. *See* LITHOGRAPHY, Sheet fed offset

**SHEET FED ROTARY MACHINES**, Four colour printing. *See* PRINTING, Colour, Four colour, Machines, Sheet fed rotary

**SHEET FED ROTARY MACHINES**, Printing. *See* PRINTING, Machines, Sheet fed rotary

**SHEETING**, Reels, Printing paper. *See* PRINTING, Paper, Reels, Sheeting

## SHEETS

Related Headings:  
FILM  
FILMS  
FOIL

## SHEETS—SUBHEADINGS—Synopsis

### Technical activities

Coating

### Materials

#### Metals

Iron—Silicon

Steel

Steel—Silicon

Non-ferrous metals

Nickel alloy

Nickel—Thorium

Aluminium

Aluminium—Magnesium

Copper

Titanium alloys

Molybdenum

Uranium

#### Plastics

Thermoplastics

Acrylonitrile—Butadiene—Styrene

P.V.C.

Polystyrene

**SHEETS, Acrylonitrile—Butadiene—Styrene, Forming, Vacuum**  
ABS sheet in vacuum forming. P. Lowe. *Brit. Plastics*, 36 (Feb 63) p.78-82. il.

**SHEETS, Aluminium, Cladding, Buildings**. *See* BUILDINGS, Cladding, Aluminium, Sheets

**SHEETS, Aluminium, Coatings, Paint, Acrylic**  
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## SHEETS, Iron—Silicon, Magnetostriction

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## SHEETS, Metals, Anisotropy

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**SHEETS, Metals, Drawing**

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**SHEETS, Steel, Coated, P.V.C., Finishing**

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**HOUSING, Sheffield**

**LIBRARIES, Branch, Sheffield**

**MARKETS, Buildings, Sheffield**

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See **MOTOR CARS, Engines, Crankcases, Casting, Cores, Shell**

**SHELL DOMES.** See **DOMES, Shell**

**SHELL ENTRANCES, Railway stations.** See **RAILWAYS, Stations, Entrances, Shell**

**SHELL MOULDS, Casting, Iron, Cocking utensils.** See

**COOKING UTENSILS, Iron, Casting, Moulds, Shell**

**SHELL MOULDS, Casting, Motor cars parts.** See **MOTOR CARS, Parts, Casting, Moulds, Shell**

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**SHELL ROOFS, Market buildings.** See **MARKETS, Buildings, Roofs, Shell**

**SHELL ROOFS, Railway stations.** See **RAILWAYS, Stations, Roofs, Shell**

**SHELL ROOFS, Schools.** See **SCHOOLS, Roofs, Shell**

**SHELL ROOFS, Terminal buildings, Airports.** See **AIRPORTS, Terminal buildings, Roofs, Shell**

**SHELL ROOFS, Training colleges, Teachers.** See **TEACHERS, Training colleges, Roofs, Shell**

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CRABS

CRAYFISH

LOBSTERS

OYSTERS

PRAWNS

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ARCHITECTURE, Shibam

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SHIELDING, Neutrons. See NEUTRONS, Shielding

SHIELDING, Nuclear reactors. See NUCLEAR REACTORS, Shielding

SHIELDING, Radioactivity. See RADIOACTIVITY, Shielding

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ALUMINIUM (Shipbuilding materials)

HULLS, Construction

MARINE ENGINEERING

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BEACONS, Shipping  
BUOYS  
LIGHTHOUSES  
PORTS  
SHIPS

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BARGES  
BOATS  
COASTAL VESSELS  
CONCRETE, Ready-mixed, Production, Plant, Floating  
DIVING, Equipment, Vessels  
DREDGERS (Ships)  
FERRIES  
FIREBOATS  
FISHING, Vessels  
HULLS

**SHIPS****Related Headings—cont.**

ICEBREAKERS  
LAUNCHES  
LIFEBOATS  
RAFTS  
SEAMANSHIP  
TANKERS, Ships  
TENDERS, Ships  
TOWBOATS  
TUGS  
WARSHIPS  
YACHTS

**SHIPS—SUBHEADINGS—Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Research  
Model tests  
Problems  
Damage  
Noise  
Fires  
Corrosion  
Cathodic protection

Properties  
Dimensions  
Strength  
Motion  
Stability  
Vibrations  
Surges  
Waves  
Seakeeping

Technical activities  
Design  
Testing  
Painting  
Paint  
Repairs  
Conversion  
Navigation  
Data logging  
Route planning  
Docking  
Berthing  
Fenders  
Gangways  
Bunkering

**Parts, Equipment & Services**

Structural parts  
Grillages  
Plates  
Decks  
Bulkheads  
Hatch covers  
Insulation  
Control systems  
Machinery  
Engines  
Steam engines  
Steam turbines  
Gas turbines  
Diesel engines  
Fuel oil  
Nuclear propulsion  
Gears  
Propellers  
Roll Stabilisers

**SHIPS—SUBHEADINGS—Synopsis—cont.**

Stabilisation, Tanks  
Pumps  
Boilers  
Condensers  
Cooling systems  
Mechanical handling equipment  
Cranes  
Derricks  
Pipes  
Plumbing  
Electrical equipment  
Turbo-alternators  
Power distribution  
Steering systems  
Rudders  
Services & Facilities  
Interior design  
Refuse disposal

**Performance**

Operational performance  
Speed loss  
Manoeuvrability  
Stopping

**Types of ships**

Towed  
Damaged  
By structure  
Catamaran  
By propulsion characteristics  
Sailing  
Motor  
By facilities  
Refrigerated  
By cargo  
Passenger  
Fruit carrying  
Grain  
Timber carrying  
Coal carrying  
Ore carrying  
Coal loading  
Alumina carrying  
Scrap iron carrying  
Motor car carrying  
Train carrying  
Newsprint carrying  
By special function  
Tramp  
Oceanography research  
Cable laying  
Lighthouse supply  
(Inland waterways)

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Aluminium in a loading gantry—reduced construction and maintenance costs. *Light Metals*, 26 (Jul 63) p.38. il.  
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Mooring tractor for dock work [F. C. Hibberd & Co. 'Planet']  
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**SHIPS, Boilers**

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**SHIPS, Boilers, Feedwater, Dissolved oxygen**

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Improved steam propulsion plant to reduce building and operating costs (abstract) D. C. MacMillan & E. C. Rohde. *Shipbuilder*, 70 (Mid-Apr 63) p.260-3. il.

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Electro-dynamic balancing machine: indicates angular position & amount of unbalance simultaneously. [Avery] *Shipbuilding & Shipping Record*, 102 (14 Nov 63) p.640-1. il.

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Shore trials of marine steam turbine machinery [British Ship Research Association, Wallsend Research Station]

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Prototype standard Doxford ship. *Shipping World*, 149 (31 Jul 63) p.173-4. il.

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Wave-bending moments. M. Chilton. *Shipbuilder*, 70 (Jul 63) p.378-82. il. refs.

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"Apsleyhall"—highest powered Doxford built ship. *Shipbuilder*, 70 (May 63) p.306. il.

Fast British dry cargo ship from Doxfords. *Shipping World*, 148 (13 Mar 63) p.551-2. il.

**SHIPS, "Bandak"**

'Largest German-built bulk carrier, the 'Bandak'. *Motor Ship*, 44 (Sep 63) p.247-9. il.

**SHIPS, "Bariloche"**

"Bariloche", a universal bulk carrier. *Shipbuilding & Shipping Record*, 100 (13 Dec 62) p.767-9. il.

**SHIPS, "Beira"**

Built in two countries. *Shipping World*, 148 (19 Jun 63) p.1109-10. il.

**SHIPS, "Benarty"**

"Benarty". *Shipbuilder*, 70 (Apr 63) p.166-70. il.

"Benarty". *Shipping World*, 148 (13 Mar 63) p.545-8. il.

"Benarty", a 12,000-ton d.w. cargo ship. *Shipbuilding & Shipping Record*, 101 (28 Feb 63) p.275-6. il.

Ben Line cargo ship M.V. "Benarty". *Engineer*, 215 (15 Mar 63) p.483-4. il.

180 ton lifting gear on the 'Benarty'. *Motor Ship*, 43 (Mar 63) p.568-9. il.

17½-knot heavy lift cargo liner. *Marine Engr and Naval Architect* 86 (Apr 63) p.157-61. il.



**SHIPS, "Booker Vanguard"**

Open ship for Booker line. *Marine Engr. & Naval Architect*, 86 (Oct 63) p.465-6. il.

Twin hatches in Booker line cargo ship. *Shipping World*, 149 (4 Sep 63) p.359. il.

**SHIPS, "Chatwood"**

"Chatwood", a general cargo ship. *Shipbuilding & Shipping Record*, 101 (30 May 63) p.723+. il.

"Chatwood"—a Spanish built general cargo ship for British owners. *Shipbuilder*, 70 (Jul 63) p.373-5. il.

Spanish-built cargo vessel for British owners. *Motor Ship*, 44 (Jun 63) p.104-7. il.

**SHIPS, "Cimbria"**

"Cimbria"—a self-trimming general trader. *Shipbuilding & Shipping Record*, 102 (5 Dec 63) p.740-1. il.

**SHIPS, "Clarkforth"**

"Clarkforth", a general-purpose cargo liner. *Shipbuilding & Shipping Record*, 100 (27 Dec 62) p.831-4. il.

**SHIPS, "Dimitrios"**

"Dimitrios" a 14,560-ton d.w. Yugoslav-built general cargo vessel for London-Greek owners. *Shipbuilding & Shipping Record*, 102 (28 Nov 63) p.702-5. il.

**SHIPS, "Dougga"**

Refrigerated cargo-liners "Zarzis" & "Dougga" each powered by twin M.W.M. diesel engines turning a single propeller through reduction gears. *Shipbuilding & Shipping Record*, 102 (5 Sep 63) p.306-9. il.

**SHIPS, "Duchess"**

Faversham-built motor coaster. *Marine Engr. & Naval Architect*, 86 (May 63) p.223+. il.

**SHIPS, "Duke of Athens"**

"Duke of Athens". *Shipbuilder*, 70 (Jan 63) p.46-8. il.

**SHIPS, "Essi Gina"**

"Essi Gina", a 55,400-ton bulk carrier. *Shipbuilding & Shipping Record*, 102 (29 Aug 63) p.278-9. il.

"Essi Gina"—a large bulk carrier for Norwegian owners. *Shipbuilder*, 70 (Sep 63) p.466-7. il.

55400 ton d.w. bulk carrier "Essi Gina". *Motor Ship*, 44 (Aug 63) p.189-92. il.

World's largest bulk carrier. *Shipping World*, 149 (14 Aug 63) p.242+. il.

**SHIPS, "Falster"**

Norwegian bulk carrier "Falster". *Shipbuilding & Shipping Record*, 101 (3 Jan 63) p.14-15. il.

**SHIPS, "Ferncape"**

"Ferncape", a 15,000-ton d.w. cargo liner. *Shipbuilding & Shipping Record*, 102 (8 Aug 63) p.174-7. il.

Tweendeck ship for Norwegian owners. *Shipping World*, 149 (11 Sep 63) p.397. il.

**SHIPS, "Forcados"**

First of two ships for Elder Dempster Lines. *Shipping World*, 149 (4 Dec 63) p.888-9. il.

"Forcados". *Shipbuilder*, 70 (Dec 63) p.564-8. il.

**SHIPS, "Gédser"**

Baltic car-ferry "Gedser". *Marine Engr. & Naval Architect*, 86 (Aug 63) p.369-72. il.

**SHIPS, "Giovanni Grimaldi"**

Italian bulk carrier. *Shipping World*, 148 (27 Feb 63) p.458. il.

**SHIPS, "Grecian Flame"**

Bulk carrier "Grecian Flame". *Shipbuilding & Shipping Record*, 101 (24 Jan 63) p.107-9. il.

First of 10 standard French-built bulk carriers. *Motor Ship*, 43 (Feb 63) p.506-9. il.

General purpose bulk carrier for Greek owners. *Shipping World*, 148 (13 Feb 63) p.379-81. il.

**SHIPS, "Grudziadz"**

New class of ships for the Levant Line. *Shipping World*, 149 (4 Dec 63) p.895. il.

**SHIPS, "Helgoland"**

Helgoland—a new German cruise ship. *Shipping World*, 148 (19 Jun 63) p.1102-3. il.

**SHIPS, "Hero"**

"Hero"—Bristol built and owned. *Shipbuilding & Shipping Record*, 102 (11 Jul 63) p.42-4. il.

**SHIPS, "Hurley Beacon"**

Dutch-built ship for London owners. *Shipping World*, 149 (20 Nov 63) p.813-14. il.

**SHIPS, "Irene S. Lemos"**

Bulk carrier has grab cranes. *Shipping World*, 148 (12 Jun 63) p.1061-4. il.

**SHIPS, "Johann Schulte"**

"Johann Schulte"—a bulk carrier designed to carry Volkswagen vehicles. *Shipbuilder*, 70 (Sep 63) p.440-5. il.

'Johann Schulte'—the world's largest car carrier. *Motor Ship*, 44 (Sep 63) p.255-7. il.

**SHIPS, "Kollfinn"**

British-built ships for Norway. *Shipping World*, 149 (10 Jul 63) p.47-8. il.

**SHIPS, "Kraszewski"**

Danish-built high class cargo liner for Poland. *Motor Ship*, 44 (Oct 63) p.285-9. il.

"Kraszewski", 14,200-ton d.w. Polish cargo ship. *Shipbuilding & Shipping Record*, 101 (23 May 63) p.682-4. il.

**SHIPS, "Laponia"**

Arendal delivers first ship. *Shipping World*, 149 (23 Oct 63) p.635+. il.

**SHIPS, "Mahout"**

Cargo liner "Mahout". *Shipbuilding & Shipping Record*, 102 (18 Jul 63) p.74-8. il.

"Mahout"—a cargo liner with bridge control of the main engine. *Shipbuilder*, 70 (Aug 63) p.398-403. il.

**SHIPS, "Mai Bente"**

"Mai Bente" largest ship from Lindholmens. *Shipping World*, 149 (4 Dec 63) p.885-6. il.

31,300-ton d.w. "Mai Bente". *Shipbuilding & Shipping Record*, 102 (21 Nov 63) p.676-7. il.

31 300 ton d.w. "Mai Bente", Lindholmen's largest ship. : *Motor Ship*, 44 (Dec 63) p.394-5. il.

**SHIPS, "Malali"**

Ferry for the Essequibo River. *Ship & Boat Builder*, 16 (May 63) p.37. il.

**SHIPS, "Manchester Commerce"**

"Manchester Commerce"—Manchester Liners' first motorship. *Shipbuilder*, 70 (Aug 63) p.410-11. il.

Manchester Liners' largest diesel-engined vessel—the "Manchester Commerce". *Motor Ship*, 44 (Aug 63) p.207-10. il.

Motor cargo liner "Manchester Commerce". *Shipbuilding & Shipping Record*, 102 (1 Aug 63) p.142-7. il.

New ideas in the "Manchester Commerce". *Shipping World*, 149 (24 Jul 63) p.132+. il.

**SHIPS, "Marabank"**

Cargo liner "Marabank" for London company. *Shipbuilding & Shipping Record*, 101 (25 Apr 63) p.554-5. il.

**SHIPS, "Markhor"**

Diesel cargo liner for Brocklebank line. *Shipping World*, 148 (20 Mar 63) p.586+. il.

First Brocklebank motor ship for 42 years. *Motor Ship*, 43 (Mar 63) p.573-6. il.

"Markhor"—first modern cargo motorship for the Brocklebank fleet. *Shipbuilder*, 70 (Mar 63) p.134-8. il.

"Markhor" for general and refrigerated cargo. *Shipbuilding & Shipping Record*, 101 (14 Feb 63) p.206-8. il.

Motorship for Brocklebanks. *Marine Engr. & Naval Architect*, 86 (Mar 63) p.101-7. il.

**SHIPS, "Maurice Delmas"**

British-built ship for France. *Shipping World*, 149 (6 Nov 63) p.716+. il.

**SHIPS, "Media"**

- Cunard's new cargo liners. *Shipping World*, 149 (30 Oct 63) p.673+. il.
- "Media" first of a series of four 7,300-ton d.w. cargo liners for Cunard's Liverpool-New York service. Shipbuilding & Shipping Record, 102 (21 Nov 63) p.670-4. il.
- "Media": the first of four Cunard cargo liners. Shipbuilder, 70 (Nov 63) p.522-7. il.
- 7300 ton d.w. "Media", first of a new class of Cunard cargo liner. *Motor Ship*, 44 (Nov 63) p.356-7. il.

**SHIPS, "Megantic"**

- "Megantic": a refrigerated cargo motorship with a deadweight of 13,400 tons and insulated capacity of 580,000 cu.ft. Shipbuilder, 70 (Feb 62) p.84-91. il.
- Refrigerated cargo liner "Megantic". Shipbuilding & Shipping Record, 101 (7 Feb 63) p.174-7. il.
- Refrigerated cargo liner "Megantic". *Shipping World*, 148 (6 Feb 63) p.333-4. il.

**SHIPS, "Montreal City"**

- "Montreal City", a fast cargo-passenger liner. Shipbuilding & Shipping Record, 101 (28 Feb 63) p.270-4. il.
- New ship for Bristol City Line. *Shipping World*, 148 (27 Feb 63) p.463. il.

**SHIPS, "Montreal Star"**

- "Montreal Star": a refrigerated cargo motorship for the Blue Star Line. Shipbuilder, 70 (Oct 63) p.498-500. il.

**SHIPS, "Neder Rijn"**

- Fast Dutch cargo liner. *Shipping World*, 148 (16 Jan 63) p.223-6. il.
- Holland's fastest cargo liner. *Marine Engr. & Naval Architect*, 86 (Feb 63) p.54-8. il.
- 20 knot cargo liner "Neder Rijn". *Motor Ship*, 43 (Feb 63) p.516-19. il.

**SHIPS, "Nnamdi Azikiwe"**

- First new vessel for Nigerian National Lines. Shipbuilding & Shipping Record, 101 (7 Mar 63) p.313. il.

**SHIPS, "Norbeth"**

- Bergen yard delivers cargo motorship "Norbeth". Shipbuilding & Shipping Record, 101 (18 Apr 63) p.524. il.

**SHIPS, "Norma"**

- "Norma"—a cargo motorship of 7,530 tons deadweight. Shipbuilder, 70 (Sep 63) p.458-60. il.

**SHIPS, "Oriental Venus"**

- French-built ship for Chinese shipping magnate. *Shipping World*, 148 (15 May 63) p.897-900. il.
- Versatile cargo ship for Orient Overseas Line. *Motor Ship*, 44 (May 63) p.76-80. il.

**SHIPS, "Palatino"**

- "Palatino"—first of four fast Italian liners. *Motor Ship*, 44 (Oct 63) p.299-302. il.

**SHIPS, "Petunia"**

- "Petunia": a small size refrigerated cargo liner. Shipbuilding & Shipping Record, 101 (20 Jun 63) p.818-9. il.

**SHIPS, "Port Nicholson"**

- Refrigerated cargo liner "Port Nicholson". Shipbuilding & Shipping Record, 100 (20 Dec 62) p.800-1. il.

**SHIPS, "Queen of the Islands"**

- New class of Canadian ferry—"Queen of the Islands". *Motor Ship*, 44 (Oct 63) p.315-16. il.

**SHIPS, "Radley"**

- Cargo vessel "Radley". *Shipping World*, 149 (17 Jul 63) p.93-4. il.

**SHIPS, "Rio Corrientes"**

- Argentine cargo liner "Rio Corrientes". Shipbuilding & Shipping Record, 101 (13 Jun 63) p.740-1. il.

**SHIPS, "Rosewood"**

- Efficient general-purpose cargo ship. *Motor Ship*, 43 (Mar 63) p.558-61. il.

**SHIPS, "Sakura Maru"**

- "Sakura Maru", a floating fair ship or a passenger-cargo liner. Shipbuilding & Shipping Record, 100 (20 Dec 62) p.802-3. il.

**SHIPS, "Santa Magdalena"**

- Grace Line's "Santa Magdalena" carries containers and passengers. *Shipping World*, 148 (15 May 63) p.904-6. il.

**SHIPS, "Serifos"**

- Partly refrigerated cargo vessel 'Serifos'. *Motor Ship*, 44 (Jun 63) p.135-6. il.
- Refrigerated & general cargo ship "Serifos". Shipbuilding & Shipping Record, 102 (25 Jul 63) p.111-12. il.

**SHIPS, "Silver Isle"**

- Great Lakes bulk carrier. *Shipping World*, 148 (22 May 63) p.939-42. il.
- New type of Great Lakes ship built in Eire. *Motor Ship*, 44 (Jun 63) p.127-9. il.
- "Silver Isle". Shipbuilder, 70 (Jun 63) p.320-2. il.
- "Silver Isle" for the Great Lakes. Shipbuilding & Shipping Record, 101 (23 May 63) p.685-6. il.

**SHIPS, "Simandou"**

- First vessel for Guinea merchant service. *Motor Ship*, 44 (Sep 63) p.263-5. il.
- Guinea's first oceangoing ship. *Shipping World*, 149 (17 Jul 63) p.87-9. il.
- "Simandou"—first merchant ship for the Republic of Guinea. Shipbuilder, 70 (Aug 63) p.422-3. il.

**SHIPS, "Sophocles"**

- Fourteenth of a series: MV "Sophocles". *Shipping World*, 149 (11 Sep 63) p.396. il.

**SHIPS, "Southpole"**

- Fast refrigerated vessel "Southpole". Shipbuilding & Shipping Record, 102 (7 Nov 63) p.604-5. il.

**SHIPS, "Straat Frazer"**

- First of four Dutch 20 knot cargo liners. *Motor Ship*, 44 (Sep 63) p.236-9. il.

**SHIPS, "Strassburg"**

- Bulk carrier "Strassburg" lengthened by 50 ft. during building. Shipbuilding & Shipping Record, 102 (19 Sep 63) p.374-7. il.
- Lengthening a bulk carrier in course of construction. *Motor Ship*, 44 (Oct 63) p.303-5. il.

**SHIPS, "Tel-Aviv"**

- 30000 ton d.w. bulk carrier for Israel. *Motor Ship*, 43 (Mar 63) p.543-5. il.

**SHIPS, "Thorunn"**

- 16,800-tons shelterdeck vessel. *Shipping World*, 148 (23 Jan 63) p.255-7. il.
- "Thorunn". Shipbuilder, 70 (Feb 63) p.107-10. il.

**SHIPS, "Toulouse"**

- Wilhelmson's new ship M.V. "Toulouse" Cargo Handling International, 10 (Jan 63) p.16-17. il.

**SHIPS, "Treneglos"**

- Wm Hamilton's last ship: the "Treneglos". *Shipping World*, 149 (18 Sep 63) p.436-7. il.

**SHIPS, "Turkistan"**

- Cargo motorship "Turkistan" Marine Engr. & Naval Architect, 86 (Mar 63) p.120. il.
- "Turkistan"—18½ knot vessel for Strick Line. *Motor Ship*, 43 (Mar 63) p.578-80. il.

**SHIPS, "Tuskar"**

- Coastal cargo liner "Tuskar". Marine Engr. & Naval Architect, 86 (Jan 63) p.27-9. il.

**SHIPS, "Vikara"**

- 125-ton heavy lift on "Vikara". Shipbuilding & Shipping Record, 101 (2 May 63) p.590-1. il.
- Two Swedish cargo vessels. *Shipping World*, 148 (20 Mar 63) p.592-3. il.
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**SONIC TESTING, Castings, Iron. See IRON, Castings, Testing, Sonic****SONIC TESTING, Metals. See METALS, Testing, Sonic SONICS, Hydraulic transmission. See TRANSMISSIONS, Hydraulic, Reciprocating wave****SOOT, Blowing, Boilers. See BOILERS, Soot blowing SOPWITH CAMEL F.1 FIGHTER AIRCRAFT. See**

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**SOUND**

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MACH NUMBER

NOISE

SONIC

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GRANITE, Quarrying, Jukskei

HOUSING, Gold mining workers, Orange Free State

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IRON, Production, South Africa

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AIR TRANSPORT, Brazil

AIR TRANSPORT, Traffic control, South America

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**SOUTH SHIELDS**

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## SOUTH WEST AFRICA

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- DIAMONDS, Prospecting, South West Africa
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## SPACE CHARGE, Thermionic diodes. See DIODES,

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## SPAIN

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- FISHING, Andalusia
- FISHING, Spain
- FLATS, Barcelona
- FLATS, Costa Brava
- FOUNDRY PRACTICE, Spain
- FURNITURE, Wood, Manufactures, Spain

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- SPRAY EVAPORATION, Cooling, Gases. See GASES, Cooling, Spray evaporation
- SPRAYED ASBESTOS. See ASBESTOS, Sprayed
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- SPRAYING, Crops. See CROPS, Spraying
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- SPRAYING, Metals. See METALS, Spraying
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- STARCH, Sizing, Yarns. See YARNS, Sizing, Starch
- STARCH, Wheat, Block polymer production. See POLYMERS, Block, Production, Wheat starch
- STARCH, Wheat, Oxidation, Sodium hypochlorite**  
Oxidation of wheat starch. B. H. Thewlis. *J. of Applied Chemistry*, 13 (Oct 63) p.464-6. refs.
- STARCH-GEL ELECTROPHORESIS, Wheat protein. See WHEAT, Protein, Electrophoresis, Starch-gel
- STARFIGHTER AIRCRAFT. See AIRCRAFT, Military, Types, Lockheed F-104G Starfighter
- STARLIFTER AIRCRAFT. See AIRCRAFT, Military, Transport, Types, Lockheed StarLifter
- STARTERS, A.C. motors. See ELECTRIC MOTORS, A.C., Starters
- STARTERS (Electric motors) Contactor**  
Development of a contactor relay [B. & R. Relays Q range] E. M. Butterworth. *Radio & Electronic Components*, 3 (Dec 62) p.1023-5. il.
- STARTERS, Electric motors, Oil-fired heating. See HEATING, Oil-fired, Electric motors, Starters
- STARTERS, Induction motors. See ELECTRIC MOTORS, Induction, Starters
- STARTERS (Motor cars) Pinions, Chamfering, Machines**  
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- STARTERS, Motor vehicles**  
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- STATE PAPERS. See GOVERNMENT PUBLICATIONS
- STATIC CAPACITORS, Surface potential, Vacuum deposited metal films, Adsorption, Gases. See GASES, Adsorption, Films, Metal, Vacuum deposited, Surface potential, Measurement, Capacitors, Static
- STATIC ELECTRICITY. See ANTI-STATIC
- STATIC ELECTRICITY. See ELECTROSTATIC
- STATIC ELIMINATORS, Radioisotopes**  
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- STATIC SWITCHING CIRCUITS. See SWITCHING CIRCUITS, Contactless
- STATION WAGONS. See ESTATE CARS
- STATIONERY, Continuous, Printing**  
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- STATIONS, Buses. See BUSES, Stations
- STATIONS, Communication satellites. See SATELLITES, Artificial, Communication, Stations
- STATIONS, H.F. radio. See RADIO, H.F., Stations
- STATIONS, Radio. See RADIO, Stations
- STATIONS, Railways. See RAILWAYS, Stations
- STATIONS, Transmitters, H.F. radio links, Telephony. See TELEPHONY, Radio links, H.F., Transmitters, Stations
- STATIONS, Transmitters, H.F. radio telegraphy. See RADIO, Telegraphy, H.F., Transmitters, Stations
- STATIONS, Underground railways. See RAILWAYS, Underground, Stations



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Quality Engr., 27 (Sep/Oct 63) p.148-53. il.

**STATISTICS, Applied****Related Headings:**

BINOMIAL DISTRIBUTION  
DISTRIBUTIONS, Statistics  
EXPERIMENTS, Design  
GAUSSIAN DISTRIBUTION  
GOODNESS OF FIT  
MONTE CARLO METHOD  
OPERATIONAL RESEARCH  
REGRESSION ANALYSIS  
STOCHASTIC THEORY

STATISTICS, Applied, Inspection. See INSPECTION, Statistical methods

STATISTICS, Applied, Inspection, Glass, Containers. See CONTAINERS, Glass, Inspection, Statistical methods

STATISTICS, Applied, Pressure distribution determination, Underwater sound. See SOUND, Underwater, Pressure, Distribution, Determination, Statistics

STATISTICS, Applied, Production control. See PRODUCTION, Control, Statistical methods

STATISTICS, Applied, Projects selection, Research, Drugs. See DRUGS, Research, Projects selection, Statistical methods

STATISTICS, Applied, Vibration analysis. See VIBRATIONS, Analysis, Statistics, Applied

STATISTICS, Applied, Work study. See WORK STUDY, Statistical methods

STATISTICS, Applied, Yield determination, Chemical engineering plant. See CHEMICAL ENGINEERING, Plant, Yield, Determination, Statistics

STATISTICS, Collisions, Shipping. See SHIPPING, Collisions, Statistics

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**STEAM, Accumulators**

Steam accumulators, pt.3: operational routine of a back pressure plant and steam accumulator. W. Lamb. Heating & Ventilating Engr., 36 (Dec 62) p.323-5. il

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**STEAM, Accumulators, Conversion, Lancashire boilers**

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STEAM, Boats. See BOATS, Steam

STEAM, Cars. See MOTOR CARS, Steam

STEAM, Cleaning, Earth moving equipment. See EARTH MOVING EQUIPMENT, Cleaning, Steam

STEAM, Cleaning, Lorries. See LORRIES, Cleaning, Steam

**STEAM, Condensation coefficient**

Condensation coefficient of water. K. Nabavian & L. A. Bromley. Chemical Engng. Science, 18 (Oct 63) p.651-60. il. refs.

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**STEAM, Condensers, Linings, Coatings, Phenolic resins**

Organic resins in the field of heat transfer [Sakaphen] D. Paterson. Petroleum, 26 (Mar 63) p.114-15. il.

**STEAM, Condensers (Ships) Cooling water, Pumps, Variable pitch impeller**

Variable-pitch propeller pumps for circulating water duty [Vickers Armstrongs (Engineers) Ltd.] Marine Engr. & Naval Architect, 86 (Jul 63) p.344-5. il.

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STEAM, Drying, Printing, Wallpapers. See WALLPAPERS, Printing, Drying, Steam

STEAM, Engineering

**Related Headings:**

BOILERS  
SUPERHEATERS

**STEAM, Engineering, History**

Further note on Arthur Woolf (1766-1837) T. R. Harris. Engineer, 216 (13 Sep 63) p.426

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**STEAM, Engines, History**

Thomas Newcomen—father of the steam engine L.T.C. Rolt. Chartered Mechanical Engr., 10 (May 63) p.250-4. il. refs.

Thomas Newcomen—the birth of the steam engine. L.T.C. Rolt. Engineer, 215 (10 May 63) p.850-3. il.

Thomas Newcomen's "fire-machine". J. G. Crowther. New Scientist, 17 (21 Feb 63) p.401-4. il.

Thomas Savery 1650-1715. E. N. Simons. Brit. Steelmaker, 29 (Oct 63) p.358+. il.

STEAM, Engines, Launches. See LAUNCHES, Steam, Engines

STEAM, Engines, Pumping. See PUMPING, Engines, Steam

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STEAM, Heating, Petroleum, Tankers. See TANKERS, Ships, Petroleum, Heating, Steam

STEAM, Jets, Pickling, Metals. See METALS, Pickling, Steam jets

STEAM, Launches. See LAUNCHES, Steam

STEAM, Locomotives. See LOCOMOTIVES, Steam

STEAM, Locomotives, Tramways. See TRAMWAYS, Locomotives, Steam

STEAM, Motor vehicles. See MOTOR VEHICLES, Steam

STEAM, Moulding, Expanded polystyrene. See POLYSTYRENE, Expanded, Moulding, Steam

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Stainless steels for high pressure pipework, pt.1. J. A. McWilliam. Pipes & Pipelines, 8 (Feb 63) supplement p.xix-xx

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**STEAM, Plant, Laundries**

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**STEAM, Power plant, Papermaking.** See **PAPERMAKING, Power plant, Steam**

**STEAM, Railcars.** See **RAILCARS, Steam**

**STEAM, Shunters.** See **SHUNTERS, Steam**

**STEAM, Sterilisation, Medical instruments.** See **MEDICAL INSTRUMENTS, Sterilisation, Steam**

**STEAM, Superheated, Converters**

Siemens steam conversion system. W. Pontow. *Steam Engr.*, 32 (Jan 63) p.136-7. il.

**STEAM, Supplies, Leather manufactures.** See **LEATHER, Manufactures, Steam supplies**

**STEAM, Traps, Rubber manufactures.** See **RUBBER, Manufactures, Steam, Traps**

**STEAM, Treatment, Brick manufactures.** See **BRICKS, Manufactures, Steam treatment**

**STEAM, Tugs.** See **TUGS, Steam**

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*Marine Engr. & Naval Architect*, 85 (Annual Steam No 1962) p.1406-10. il.

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Newport news integrated steam power plant (summary)

*Marine Engr. & Naval Architect*, 85 (Annual Steam No 1962) p.1418-23. il.

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Pametrada standard frames. *Marine Engr. & Naval Architect*, 85 (Annual Steam No 1962) p.1412-17. il.

22,000 S.H.P. steam turbine designed for advanced steam conditions. *Shipbuilding & Shipping Record*, 102 (17 Oct 63) p.510-11. il.

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**STEAM, Turbines (Ships) Lubricating oils, Filters**

Stream-Line filter for turbine oils. *Marine Engr. & Naval Architect*, 86 (Jan 63) p.30-1. il.

**STEAM, Turbines (Ships) Packaged**

Improved steam propulsion plant to reduce building and operating costs (abstract) D. C. MacMillan & E. C. Rohde. *Shipbuilder*, 70 (Mid-Apr 63) p.260-3. il.

**STEAM, Turbines (Ships) Rotors, Manufactures, Balancing machines**

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**STEAM, Turbines (Ships) Starting, Cold**

Cold-starting temperatures in rotors of marine steam turbines. R. Hoyle & H. E. Mahabir. *Engineer*, 216 (30 Aug 63) p.353-6. il. refs.

**STEAM, Turbines (Ships) Testing**

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Remote control of steam turbines. *Marine Engr. & Naval Architect*, 86 (Jun 63) p.278-9. il.

Remove control of turbines in Danish oil tanker. *Shipping World*, 149 (2 Oct 63) p.516-17. il.

**STEAM, Turbines, Tankers, Ships, Gears, Planetary**

Planetary-parallel gears: (abstract) [Stal-Laval] I. Jung & T. Lundström. *Marine Engr. & Naval Architect*, 86 (Dec 63) p.585+. il.

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500 MW turbine with integral condensers. *Engineer*, 215 (1 Mar 63) p.399-400. il.

Integral condensers for 500 MW turbines. *Engineering*, 195 (15 Mar 63) p.370. il.

Integral-condenser design for 500-MW turbo-generator. *Engng. & Boiler House Rev.*, 78 (Apr 63) p.130-1. il.

Large base-load combined-cycle generator [General Electric COSAG. CODAG] *Mechanical Power*, 59 (Nov 63) p.320-1. il.

Market for 5 MW diesel generators: *Mechanical Power*, 59 (Jun 63) p.166-7

Some design problems arising in the development of very large high-speed turbines. F. Dollin. *Proc. of Instn. of Mechanical Engrs.*, 177 no.9 (1963) p.221-67. il. refs.

**STEAM, Turbines, Turbo-alternators, Control systems**

Governing and control of large turbo-generators. R. W. Peters. *English-Electric J.*, 18 (Jan/Feb 63) p.18+. il. refs.

**STEAM, Turbines, Turbo-alternators, Motor vehicle manufactures. See MOTOR VEHICLES, Manufactures, Turbo-alternators, Steam turbines****STEAM, Turbines (Turbo-alternators) Pipes, Steel-Chromium-Molybdenum**

Chrome-Moly pipe used in American turbine generator installation. *Pipes & Pipelines*, 8 (Feb 63) supplement p.xviii+. il.

**STEAM, Turbines (Turbo-alternators) Reheat, Starting**

Hot-starting trials on reheat generating units at Ferrybridge 'B' and Northfleet power stations. P. E. Austin, J. S. Beck, P. Dixon, H. M. Evans, D. Calderon, H. L. Mathews, A. H. Parish, E. J. Payton & J. Weatherson. *Proc. of Instn. of Mechanical Engrs.*, 176 no.25 (1962) p.681-738.

**STEAM, Turbines, Turbo-alternators, Run-up, Control systems**

Simplified automatic starting system for turbo-generators. A. Dehm & M. Salm. *Engrs'. Digest*, 24 (Sep 63) p.128-9

**STEAM, Turbines, Turbo-alternators, Shaft alignment**

Large steam turbine alignment problems. P. F. Carson & R. H. Telfer. *Engineer*, 216 (25 Oct 63) p.680-4. il.

**STEAM, Turbines (Turbo-alternators) Starting, Control systems**

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**STEAM, Turbines (Turbo-alternators) Starting, Thermal stresses**

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**STEAM COOLED LIGHT WATER MODERATED REACTORS,**

Nuclear propulsion, Ships. See SHIPS, Nuclear propulsion, Reactors, Light water moderated, Steam-cooled

**STEAM-GAS TURBINES, Anti missile destroyers. See**

DESTROYERS, Anti-missile, Steam-Gas turbines

**STEAM-GAS TURBINES, Frigates. See FRIGATES, Steam-**

Gas turbines

**STEAM GENERATING HEAVY WATER MODERATED**

NUCLEAR REACTORS. See NUCLEAR REACTORS,

Heavy water moderated, Steam generating

**STEAM-METHANE, Reforming, Synthesis gas production. See**

SYNTHESIS GAS, Production, Methane-Steam, Reforming

**STEAM-NAPHTHA, Reforming, Synthesis gas. See SYNTHESIS**

GAS, Production, Steam-Naphtha, Reforming

**STEAM-WATER, Flow, Pipes**

Steam-water critical flow through pipes. R. James. *Proc. of Instn. of Mechanical Engrs.*, 176 no.26 (1962) p.741-8. il. refs.

**STEAMLESS HOT EXTRUSION, Clay, Bricks. See BRICKS,**

Clay, Extrusion, Hot, Steamless

**STEEL**

New look at steel [BS 15] *Engng. Materials & Design*, 6 (May 63) p.342-3. il.

**STEEL-SUBHEADINGS-Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Information services**Research**Standards**Problems**Corrosion**Burning**Overheating**Properties**Effect of**Mechanical properties**Creep**Brittle fracture**Embrittlement**Surfaces**Machining properties**Phase transformations**Brittle-Ductile transition*



## STEEL—SUBHEADINGS—Synopsis—cont.

- Chemistry
  - Hydrogen potential
  - Oxygen potential
  - Inclusions
- Technical activities
  - Metallography
  - Analysis
    - Determination of
  - Production
  - Manufactures
    - Mills
    - Melting
      - Re-melting
    - Vacuum treatment
    - Foundry practice
      - Foundries
    - Casting
    - Rolling
    - Extrusion
    - Forging
    - Bending
    - Heat treatment
    - Hardening
    - Ausforming
    - Strain ageing
    - Powder metallurgy
    - Welding
    - Blackening
    - Pickling
    - Coating
      - Aluminising
      - Galvanising
      - Painting
    - Work handling
    - Packaging
    - Storage
    - Transport
- Products
  - Castings
  - Forgings
  - Scrap
- Types of steel
  - By state
    - Liquid
  - By process
    - Open hearth
    - Cast
    - Vacuum melted
    - Cold rolled
    - Heated
      - Reheated
    - Heat treated
    - Carburised
    - Welded
    - Electroplated
  - By property
    - High temperature
    - High tensile
  - By phase
    - Austenitic
    - Martensitic
    - Bainitic
  - By material
    - Alloys
    - Mild
    - Low alloy
    - High carbon
    - Stainless
  - By purpose
    - (Vitreous enamelling)
- STEEL, Aircraft components. See AIRCRAFT, Components, Steel
- STEEL, Alloys, Casting, Centrifugal
  - Manufacture of high alloy steel components by the centrifuging process for aircraft and similar high duty applications. A. E. Thornton. Brit. Foundryman, 56 (Feb 63) p.63-73. il. refs.
- STEEL, Alloys, Chains, Hoisting equipment. See HOISTING EQUIPMENT, Chains, Steel alloys
- STEEL, Alloys, Production, Control
  - Automatic analysis speeds production of alloy steels. Iron & Steel, 36 (Apr 63) p.170-1. il.
- STEEL, Alloys, Production, History
  - Robert Mushet and the Forest of Dean. M. Schofield. Iron & Steel, 36 (Feb 63) p.65-6. refs.
- STEEL, Alloys, Production, Spectroscopy, Ultraviolet, Vacuum
  - Auto-spectrography for alloy-steel production control. L. Kidman. Control, 7 (Sep 63) p.126-31. il.
- STEEL, Alloys, Spectroscopy, Spark, Controlled atmospheres
  - Use of controlled atmospheres for the elimination of inter-elemental effects in spectrographic analysis, with particular reference to the analysis of highly alloyed steels. S. Muir, A. D. Ambrose & D. W. Swingler. Metallurgia, 67 (May 63) p.251-7. il. refs.
- STEEL, Alloys, Spectroscopy, X-ray fluorescence
  - X-ray fluorescence spectrometry for analysis of alloy steels. D. F. Sermin. Steel & Coal, 187 (19 Jul 63) p.116-23. il.
- STEEL, Alloys, Stress relieving, Testing
  - Summary report on stress relaxation data. G. E. Tummers. Brit. Welding J., 10 (Jun 63) p.292-303. il. refs.
- STEEL, Aluminising, Hot dip
  - Continuous dip aluminising of steel. D. M. Dovey & A. Waluski. Metallurgia, 67 (May 63) p.211-17. il. refs.
- STEEL, Arches, Supports, Mining, Metals. See METALS, Mining, Supports, Arches, Steel
- STEEL, Ausforming
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BUCKLING

BURST TESTING

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CRACKS

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ELASTICITY

FATIGUE

FLOW STRESS

FRACTURE

HARDNESS

IMPACT RESISTANCE

IMPACT STRENGTH

IMPACT TESTS

NOTCH TESTING

PHOTOELASTICITY

PLASTIC DEFORMATION

PLASTICITY

RHEOLOGY

SHEAR

SOLIDS, Mechanical properties

STRAIN

STRESS CONCENTRATION

STRESS RUPTURE

STRESS-STRAIN RELATIONSHIPS

STRESSES

TENSILE STRENGTH

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**SUD-AVIATION CARAVELLE SUPER B AIRCRAFT.** See AIRCRAFT, Types, Sud-Aviation Caravelle Super B

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**SUGARS**

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GLUCOSE  
MALTOSE  
MALTOTETRAOSE  
MALTOTRIOSE  
MANNOSE  
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PSICOSE  
SUGAR

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SULPHIDES, Ores, Nickel. See NICKEL, Ores, Sulphide

SULPHIDES-WATER, Corrosion, Iron. See IRON, Corrosion, Sulphides-Water

SULPHITE PULP. See PULP, Sulphite

SULPHOLANE, Solvent extraction, Aromatic compound

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SULPHUR, Compounds, Air pollution. See AIR POLLUTION, Sulphur compounds

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SULPHUR, Determination, Organic compounds. See ORGANIC COMPOUNDS, Determination of sulphur

SULPHUR, Determination, Refining, Petroleum. See PETROLEUM, Refining, Sulphur determination

SULPHUR, Determination, Silicate rock. See ROCK, Silicates, Determination of sulphur

SULPHUR, Determination, Toluene. See TOLUENE, Determination of sulphur

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**SULPHURIC ACID, Corrosion, Mild steel.** See STEEL, Mild, Corrosion, Sulphuric acid

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**SULPHURIC ACID, Pickling, Steel, Strips.** See STRIPS, Steel, Pickling, Sulphuric acid

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**SULPHURIC ACID, Solutions, Anodising, Aluminium.** See ALUMINIUM, Anodising, Solutions, Sulphuric acid

**SULPHURIC ACID, Solutions, Deposits, Niobium anodes.**

See ANODES, Niobium, Deposits, Sulphuric acid solutions

**SULPHURIC ACID, Solutions, Deposits, Tantalum, Anodes.**

See ANODES, Tantalum, Deposits, Sulphuric acid solutions

**SULPHURIC ACID, Solutions, Platinum, Electrodes.** See ELECTRODES, Platinum, Sulphuric acid solutions

**SULPHURIC ACID, Solvent extraction, Thorium.** See THORIUM, Solvent extraction, Sulphuric acid

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#### SUPERCARGERS

Related Headings:

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SUPPORTS, Face, Coal mining. See PIT-PROPS

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SURFACE REACTIONS, Fatigue stressed metals. See METALS, Fatigue stressed, Surface reactions

#### SURFACE TENSION

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**SURVEYING, Aerial, Roads. See ROADS, Surveying, Aerial****SURVEYING, Civil engineering. See CIVIL ENGINEERING, Surveying****SURVEYING, Coal mining. See COAL, Mining, Surveying****SURVEYING, Geophysical, Ground water. See GROUND****WATER, Surveying, Geophysical****SURVEYING, Gyroscopes**

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SUSPENSIONS, Rolling stock, Railways. See ROLLING STOCK (Railways) Suspensions

SUSPENSIONS, Rubber, Rolling stock, Railways. See ROLLING STOCK (Railways) Suspensions, Rubber

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TECHNICAL EDUCATION, Adult, Sweden

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TRIGATRONS

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**TECHNICAL EDUCATION**

Related Headings:

APPRENTICESHIPS

LANGUAGES, Teaching

TEACHING

VOCATIONAL GUIDANCE

**TECHNICAL EDUCATION—SUBHEADINGS—Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

Particular localities

*Great Britain*

*Ireland*

*Europe*

*Spain*



## TECHNICAL EDUCATION—SUBHEADINGS—Synopsis—cont.

Europe—cont.

Eastern Europe

Russia

Research

Equipment

Laboratories

Methods

Teaching

Training officers

Audio-visual aids

Examinations

Sandwich courses

Certification

Grade or system

Part time

Adult

Universities

Women

Overseas students

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Science for adults. H. Frost. *New Scientist*, 20 (14 Nov 63) p.398

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Adult training and re-training in the US. G. Tolley. *Technical Education*, 5 (Jul 63) p.308-9Experiment in retraining skilled men [Stanford Research Institute] *Engineering*, 195 (24 May 63) p.722

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TECHNICAL EDUCATION, Aircraft engineering. See AIRCRAFT, Engineering, Education

TECHNICAL EDUCATION, Architectural design. See ARCHITECTURE, Design, Education

TECHNICAL EDUCATION, Architecture. See ARCHITECTURE, Education

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TECHNICAL EDUCATION, Bottling, Beer. See BEER, Bottling, Education

TECHNICAL EDUCATION, Boxes manufacture. See BOXES, Manufactures, Education

TECHNICAL EDUCATION, Brewing. See BREWING, Education

TECHNICAL EDUCATION, Building. See BUILDING, Education

TECHNICAL EDUCATION, Building equipment. See BUILDING, Equipment, Education

TECHNICAL EDUCATION, Bus transport. See BUSES, Transport, Education

TECHNICAL EDUCATION, Carton manufacture. See CARTONS, Manufactures, Education

TECHNICAL EDUCATION, Ceramics. See CERAMICS, Education

## TECHNICAL EDUCATION, Certification, Great Britain

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TECHNICAL EDUCATION, Chemical engineering. See CHEMICAL ENGINEERING, Education

TECHNICAL EDUCATION, Chemical engineering technicians. See CHEMICAL ENGINEERING, Technicians, Education

TECHNICAL EDUCATION, Chemistry. See CHEMISTRY, Education

TECHNICAL EDUCATION, Civil engineering. See CIVIL ENGINEERING, Education

TECHNICAL EDUCATION, Coal mining engineering. See COAL, Mining, Engineering, Education

TECHNICAL EDUCATION, Coal utilisation. See COAL, Utilisation, Education

TECHNICAL EDUCATION, Communications engineering. See COMMUNICATIONS, Engineering, Education

TECHNICAL EDUCATION, Computer operators. See COMPUTERS, Operators, Technical education

TECHNICAL EDUCATION, Computers. See COMPUTERS, Education

TECHNICAL EDUCATION, Control engineers. See CONTROL SYSTEMS, Engineers, Education

TECHNICAL EDUCATION, Control system operators. See CONTROL SYSTEMS, Operators, Training

TECHNICAL EDUCATION, Control systems, Cotton looms. See COTTON, Looms, Control systems, Education

TECHNICAL EDUCATION, Corrosion. See CORROSION, Education

TECHNICAL EDUCATION, Dairy industry. See DAIRY INDUSTRY, Education

TECHNICAL EDUCATION, Diesel locomotive maintenance. See LOCOMOTIVES, Diesel, Maintenance, Training

TECHNICAL EDUCATION, Driving, Commercial vehicles. See VEHICLES, Commercial, Driving, Education

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TECHNICAL EDUCATION, Electrical engineering. See ELECTRICAL ENGINEERING, Education

TECHNICAL EDUCATION, Electrical engineering technicians. See ELECTRICAL ENGINEERING, Technicians, Education

TECHNICAL EDUCATION, Electrical machinery. See ELECTRICAL MACHINERY, Education

TECHNICAL EDUCATION, Electronic equipment design. See ELECTRONIC EQUIPMENT, Design, Education

TECHNICAL EDUCATION, Electronic equipment reliability. See ELECTRONIC EQUIPMENT, Reliability, Education

TECHNICAL EDUCATION, Electronics. See ELECTRONICS, Training

TECHNICAL EDUCATION, Engineering. See ENGINEERING, Education

TECHNICAL EDUCATION, Engineering, Coal mining. See COAL, Mining, Engineering, Education

TECHNICAL EDUCATION, Engineering design. See ENGINEERING, Design, Education

TECHNICAL EDUCATION, Engineering management. See ENGINEERING, Management, Education

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TECHNICAL EDUCATION, Organic chemistry. See ORGANIC CHEMISTRY, Education

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TECHNICAL EDUCATION, Photoengraving. See PHOTO-ENGRAVING, Education

TECHNICAL EDUCATION, Photography. See PHOTOGRAPHY, Education

TECHNICAL EDUCATION, Pilots, Flying. See FLYING, Pilots, Training

TECHNICAL EDUCATION, Plant maintenance, Engineering. See ENGINEERING, Plant, Maintenance, Education

TECHNICAL EDUCATION, Plastics. See PLASTICS, Education

TECHNICAL EDUCATION, Plumbing. See PLUMBING, Education

TECHNICAL EDUCATION, Pneumatic engineering. See PNEUMATIC ENGINEERING, Education

TECHNICAL EDUCATION, Police. See POLICE, Education

TECHNICAL EDUCATION, Powder technology. See POWDERS, Technology, Education

TECHNICAL EDUCATION, Printing. See PRINTING, Education

TECHNICAL EDUCATION, Printing inks. See PRINTING, Inks, Education

TECHNICAL EDUCATION, Production engineering. See PRODUCTION, Engineering, Education

TECHNICAL EDUCATION, Production management, Coal mining. See COAL, Mining, Production, Management, Education

TECHNICAL EDUCATION, Programs, Computers. See COMPUTERS, Programs, Education

TECHNICAL EDUCATION, Radioactivity. See RADIOACTIVITY, Education

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TECHNICAL EDUCATION, Ship machinery. See SHIPS, Machinery, Education

TECHNICAL EDUCATION, Shipbuilding. See SHIPBUILDING, Education

TECHNICAL EDUCATION, Shoedesign. See SHOES, Design, Education

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TECHNICAL EDUCATION, Town gas. See GAS (Town) Education

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TECHNICAL EDUCATION, Type-founding. See TYPE-FOUNDING, Education

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**TECHNICAL EDUCATION, Universities**

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**TECHNICAL EDUCATION, Women**

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- Frank look at the US(A) F. H. Smith. *Engineering*, 196 (13 Nov 63) p.636

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See

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**TELESCOPES, Time measurement. See TIME, Measurement, Telescopes****TELEVISION-SUBHEADINGS-Synopsis**

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

Particular countries

*Japan*

Testing

Transmission

*Bandwidth*

*V.H.F.*

*U.H.F.*

Signal s

*Test charts*

*Field strength*

*Luminance*

*Projection*

Equipment

*Cameras*

*Transmitters*

*Receivers*

Broadcasts

*Studios*

*Outside broadcasts*

*Cable-links*

Radio links

*Microwave links*

Material televised

*Lighting*

*Photography*

*Films*

Programmes

*News services*

Systems

*Wired*

*Pay*

*Colour*

*Closed circuit*

Applications

*Teaching aids*

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ICONOSCOPES

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- TELEVISION, Closed circuit, Control systems, Galvanising, Steel, Strips. See STRIPS, Steel, Galvanising, Control systems, Television, Closed circuit
- TELEVISION, Closed circuit, Control systems, Signals, Traffic, Roads. See ROADS, Traffic, Signals, Control systems, Closed circuit television
- TELEVISION, Closed circuit, Control systems, Steel production. See STEEL, Production, Control systems, Television, Closed circuit
- TELEVISION, Closed circuit, Inspection, Boreholes, Coal prospecting. See COAL, Prospecting, Boreholes, Inspection, Television, Closed circuit
- TELEVISION, Closed circuit, Inspection, Tinplate. See TIN-PLATE, Inspection, Television, Closed circuit
- TELEVISION, Closed circuit, Inspection, Underground pipelines. See PIPELINES, Underground, Inspection, Television, Closed circuit
- TELEVISION, Closed circuit, Loading, Commercial vehicles. See VEHICLES, Commercial, Loading, Television, Closed circuit
- TELEVISION, Closed circuit, Marshalling yards, Railways. See RAILWAYS, Marshalling yards, Television, Closed circuit
- TELEVISION, Closed circuit, Power stations. See POWER STATIONS, Television, Closed circuit
- TELEVISION, Closed circuit, Railways. See RAILWAYS, Television, Closed circuit
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## TERPENES

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## TERRAGNI G.

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FABRICS, Double, Terylene-wool

TERYLENE-WOOL, Fabrics. See FABRICS, Terylene-Wool

TERYLENE-WOOL, Jersey fabrics. See JERSEY FABRICS, Terylene-Wool

TERYLENE-WOOL, Socks. See SOCKS, Terylene-Wool

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## TESTING, Non-destructive

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TESTING, Non-destructive, Non-ferrous metals. See NON-FERROUS METALS, Testing, Non-destructive

TESTING, Non-destructive, Nuclear propulsion plant, Ships. See SHIPS, Nuclear propulsion, Plant, Testing, Non-destructive

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CHLORIDE, Effect on keratin, Wool. See WOOL, Keratin, Effect of tetrakis (hydroxymethyl) phosphonium chloride

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**TETRODE INVERTED VOLTMETERS**. See VOLTMETERS, Inverted tetrode

#### TEXAS

See

AIR CONDITIONING, Houston

GAS, Natural, Pipelines, Texas

METALS, Manufactures, Texas

METALS, Mining, Texas

TRAMWAYS, Fort Worth

TEXTBOOKS, Education, Chemistry. See CHEMISTRY, Education, Textbooks

#### TEXTILES

Related Headings:

ANIMAL FIBRES

BATTS

BLANKETS

CARDING

CARPETS

COMBING

CORDAGE

COTTON

FABRICS

JUTE

KNITTING

LINEN

MAN-MADE FIBRES

OKRA, Fibres

SEWING

SILK

SISAL

WADDING

WOOL

YARNS

#### TEXTILES-SUBHEADINGS-Synopsis-cont.

Technical activities

Manufactures

Factories

Finishing

Finishes

Bleaching

Dyeing

Dyes

Drying

Performance

Types of textiles

By material

Cellulosic

#### TEXTILES, Bleaching

Bleaching and finishing plant for Sudan. Textile

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#### TEXTILES, Bleaching, Effluents, River pollution

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Recent developments in dyeing and finishing machinery. E.

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#### TEXTILES, Dyeing, Reactive dyes

Better late than never [reactive dye progress in the U.S.A.]

A. J. Hall. Skinner's Record, 37 (Jul 63) p.559-60. il.

Recent developments in reactive dyeing and printing. J. Mc-

Cartney Jnr. Dyer, Textile Printer, Bleacher & Finisher, 129 (8 Mar 63) p.335+. refs.

#### TEXTILES-SUBHEADINGS-Synopsis

This synopsis shows, in *italic*, related subheadings which are separated in the alphabetical sequence following.

Terminology

Education

Research

Problems

*Electrostatic charges*

Tests

Properties

*Fibres*

*Strength*

*Moisture content*

Chemicals

**TEXTILES, Dyeing, Reactive dyes, Catalysts**

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**TEXTILES, Finishes, Fluorocarbon resins**

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**TEXTILES, Household. See HOUSEHOLD TEXTILES****TEXTILES, Industry, Hungary**

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**TEXTILES, Manufactures, Studies, Photography, High speed**

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**TEXTURES, Crystals. See CRYSTALS, Textures THAILAND**

See

GEMS, Mining, Thailand

HYDROELECTRIC POWER STATIONS, Bhumiphol dam

THALLIUM, Compounds, Precipitation, Emulsions photography. See PHOTOGRAPHY, Emulsions, Precipitation, Thallium compounds

THALLIUM, Electrodes. See ELECTRODES, Thallium

THAMES RIVER, Dams. See DAMS, Thames River

THAMES TRADER LORRIES. See LORRIES, Types, Ford Thames Trader

THATCHED ROOFS. See ROOFS, Thatched

THAWING, Dielectric, Frozen meat. See MEAT, Frozen, Thawing, Dielectric

THAWING, Electrical, Water pipes. See WATER, Pipes, Thawing, Electrical

THAWING, Sea-frozen fish. See FISH, Sea-frozen, Thawing

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**THEATRES, Cardiff**

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**THEATRES, Operating.** See HOSPITALS, Operating theatres**THEATRES, Parliamentary buildings.** See PARLIAMENTARY BUILDINGS, Theatres**THEATRES, Prefabricated, Wood**

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**THEATRES, Steelwork, Welding**

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BURGLAR ALARM SYSTEMS  
BURGLARY PREVENTION  
SAFES

**THEFT PREVENTION, Equipment**

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**THEFT. PREVENTION, Lorries.** See LORRIES, Theft prevention**THEOLOGICAL COLLEGES.** See COLLEGES, Theological**THERMAL ANALYSIS**

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**THERMAL ANALYSIS, Alumina-Calcium carbonate-Silica glass formation.** See GLASS, Alumina-Calcium carbonate-Silica, Formation, Thermal analysis**THERMAL ANALYSIS, Differential**

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**THERMAL ANALYSIS, Differential, Balances**

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KATHAROMETERS

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- THERMAL DECOMPOSITION, Plastics. See PLASTICS, Thermal decomposition
- THERMAL DECOMPOSITION, Polymers. See POLYMERS, Thermal decomposition
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- THERMAL EQUILIBRIUM, Clothing. See CLOTHING, Thermal equilibrium
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- THERMAL EXPANSION, Iron-Silicon. See IRON-SILICON, Thermal expansion
- THERMAL EXPANSION, Neptunium. See NEPTUNIUM, Thermal expansion
- THERMAL EXPANSION,  $\delta$ -Phase, Crystals, Plutonium. See PLUTONIUM, Crystals,  $\delta$ -Phase, Thermal expansion
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- THERMAL HYDROCRACKING, Refining, Petroleum, Methyl cyclohexane production. See METHYL CYCLOHEXANE, Production, Petroleum, Hydrocracking, Thermal
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- THERMAL INSULATION, Boilers. See BOILERS, Thermal insulation
- THERMAL INSULATION, Bottling plant, Spirits. See SPIRITS, Bottling, Plant, Insulation, Thermal
- THERMAL INSULATION, Buildings. See BUILDINGS, Insulation, Thermal
- THERMAL INSULATION, Cold stores. See COLD STORES, Insulation
- THERMAL INSULATION, Expanded polyurethane. See POLYURETHANE, Expanded, Thermal insulants
- THERMAL INSULATION, Factories. See FACTORIES, Insulation, Thermal
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- THERMAL INSULATION, Foamback fabrics. See FABRICS, Foamback, Thermal insulation
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- THERMAL INSULATION, Pipes, Air conditioning, Office buildings. See OFFICE BUILDINGS, Air conditioning, Pipes, Insulation, Thermal
- THERMAL INSULATION, Polyamide fibres, Fabrics, Knitwear. See KNITWEAR, Fabrics, Polyamide fibres, Thermal insulation properties
- THERMAL INSULATION, Prefabricated buildings. See BUILDINGS, Prefabricated, Insulation
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- THERMAL INSULATION, Steam pipes, Wood manufactures. See WOOD, Manufactures, Pipes, Steam, Insulation
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- THERMAL INSULATION, Surfaces, Liquids. See LIQUIDS, Surfaces, Insulation, Thermal
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- THERMAL INSULATION, Wool fabrics, Knitwear. See KNITWEAR, Fabrics, Wool, Thermal insulation properties
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- THERMAL IONISATION, Solid particles. See PARTICLES, Ionisation, Thermal
- THERMAL RESISTANCE, Semiconductors. See SEMICONDUCTORS, Thermal resistance
- THERMAL RESISTORS, Temperature measurement, Liquid helium. See HELIUM, Liquid, Temperature, Measurement, Thermal resistors
- THERMAL SHOCK, Resistance, Bone china, Cups, Tableware. See TABLEWARE, Cups, Bone china, Thermal shock resistance
- THERMAL SHOCK, Resistance, Non-vitreous ceramics, Insulators. See INSULATORS, Ceramics, Non-vitreous, Thermal shock resistance
- THERMAL STORAGE, Heating, Buildings. See BUILDINGS, Heating, Thermal storage
- THERMAL STORAGE, Heating, Exchanges, Automatic telephony. See TELEPHONY, Automatic, Exchanges, Heating, Thermal storage
- THERMAL STORAGE, Heating, Houses. See HOUSES, Heating, Thermal storage
- THERMAL STORAGE, Heating, Housing. See HOUSING, Heating, Thermal storage
- THERMAL STORAGE, Heating, Industrial buildings. See INDUSTRIAL BUILDINGS, Heating, Thermal storage
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- THERMAL STORAGE, Water heating, Houses. See HOUSES, Water, Heating, Thermal storage
- THERMAL STRESSES, Diesel engines. See DIESEL ENGINES, Stresses, Thermal
- THERMAL STRESSES, Discs. See DISCS, Stresses, Thermal
- THERMAL STRESSES, Fixed tube plate heat exchangers. See HEAT, Exchangers, Fixed tube plate, Stresses, Thermal
- THERMAL STRESSES, Heat transfer, Tubes. See TUBES, Heat transfer, Stresses, Thermal
- THERMAL STRESSES, Rectangular plates. See PLATES, Rectangular, Thermal stresses
- THERMAL STRESSES, Reinforced concrete. See CONCRETE, Reinforced, Thermal stresses
- THERMAL STRESSES, Reinforced concrete slabs. See SLABS, Concrete, Reinforced, Thermal stresses



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**THERMAL TRANSFORMATIONS**, Iron alloys. See **IRON**, Alloys, Thermal transformations

**THERMAL TRANSFORMATIONS**, Iron-Silicon. See **IRON-SILICON**, Thermal transformations

**THERMAL TRANSPIRATION**, Microbalances. See **MICRO-BALANCES**, Thermal transpiration

**THERMALISATION**, Neutrons, Nuclear reactors. See **NUCLEAR REACTORS**, Neutrons, Slowing down

**THERMIC BORING**, Reinforced concrete. See **CONCRETE**, Reinforced, Boring, Thermic

**THERMIONIC CATHODES**. See **CATHODES**, Thermionic

**THERMIONIC DIODES**. See **DIODES**, Thermionic

**THERMIONIC TUBES**. See **ELECTRON TUBES**, Thermionic

**THERMISTOR ANEMOMETERS**. See **ANEMOMETERS**, Thermistor

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**THERMISTOR FLOWMETERS**, Low velocities measurement, Flow, Fluids. See **FLUIDS**, Flow, Low velocities, Measurement, Flowmeters, Thermistor

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**THERMIT WELDING**, Steel. See **STEEL**, Welding, Thermit

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**THERMOCOUPLES**, Temperature measurement, Liquid steel. See **STEEL**, Liquid, Temperature, Measurement, Thermocouples

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**THERMODYNAMICS**, Chemical reactions. See **CHEMICAL REACTIONS**, Thermodynamics

**THERMODYNAMICS**, Liquid-vapour systems. See **LIQUID-VAPOUR SYSTEMS**, Thermodynamics

**THERMODYNAMICS**, Magnesium-Thorium. See **MAGNESIUM-THORIUM**, Thermodynamics

**THERMODYNAMICS**, Refrigerants. See **REFRIGERANTS**, Thermodynamic properties

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PELTIER EFFECT

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- THERMOFIXATION, Dyes, Man-made fibres.** See MAN-MADE FIBRES, Dyes, Thermofixation
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- THERMOFORMING, Thermoplastics.** See THERMOPLASTICS, Thermofforming
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ACRYLONITRILE-BUTADIENE-STYRENE  
CELLULOSE ACETATE  
FLUOROCARBONS, Resins  
NYLON  
P.T.F.E.  
P.V.A.  
P.V.C.  
PHENYLENE SULPHIDE, Polymer  
POLYAMIDES  
POLYCARBONATE RESINS  
POLYETHYLENE TEREPHTHALATE  
POLYMETHYL METHACRYLATE  
POLYPROPYLENE



**THERMOPLASTICS**

Related Headings—cont.

POLYSTYRENE

POLYTHENE

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POLYVINYL CARBAZOLE

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junction

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**UNIT OPERATIONS**

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ADSORPTION  
BOILING  
CHEMICALS, Grinding  
CRYSTALLISATION  
DISTILLATION  
DRYING, Chemical engineering  
DRYING, Fluidised bed  
EVAPORATION  
FILTRATION  
FLOCCULATION  
FLOTATION  
FLUIDISATION  
GRANULATION  
MASS TRANSFER OPERATIONS  
SEDIMENTATION  
SEPARATION  
SORPTION

**UNIT PROCESSES**

Related Headings:

AMINATION  
AMINOLYSIS  
CATALYSTS  
CHLORINATION  
CRACKING, Catalytic  
CRACKING, Thermal  
CYANIDATION  
DECARBOXYLATION  
DEFLUORINATION  
DEPHENOLATION  
FERMENTATION  
HALOGENATION  
HYDROGENATION  
HYDROLYSIS  
ION EXCHANGE  
ISOMERISATION  
NEUTRALISATION  
NITROGENATION  
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AIRPORTS, Terminal buildings, New York  
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AMERICAN SOCIETY OF ENGINEERING EDUCATION  
ARCHITECTS, U.S.A.  
ASBESTOS, Mining, Calaveras County  
ASTRONAUTICS, Research, U.S.A.  
BRIDGES, Box girder, California  
BUILDINGS, Insulation, U.S.A.  
BUSES, Stations, New York  
BUSES, Transport, Traffic engineering, U.S.A.  
BUTTER, Manufacture, U.S.A.  
CAR PARKING, Meters, U.S.A.  
CERAMICS, Education, U.S.A.  
CHEMICAL TECHNOLOGY, U.S.A.  
CHESAPEAKE BAY BRIDGE-TUNNEL  
CIVIC CENTRES, Marin County (California)  
COAL, Industry, U.S.A.  
COAL, Mining, Opencast, McKinley  
COAL, Preparation, U.S.A.  
COPPER, Mining, Gila County  
DAIRIES, Control systems, U.S.A.  
DAIRY INDUSTRY, Equipment, United States  
DOCKS, Dry, Floating, Portland (U.S.A.)  
ELECTRIC POWER SYSTEMS, U.S.A.  
ELECTRIC POWER SYSTEMS, U.S.A., Pacific States  
ELECTRONICS, Research, U.S.A.  
FABRICS, Foamback, U.S.A.  
FIRES, Prevention, U.S.A.  
FISHING, Ports, San Pedro  
FLATS, Chicago  
FOOD, Freeze-dried, U.S.A.  
FOUNDRY PRACTICE, U.S.A.  
FUELS, U.S.A.  
GAS, Natural, Liquefied, U.S.A.  
GAS, Natural, Pipelines, Louisiana  
GAS, Natural, Pipelines, Texas  
GAS, Natural, Pipelines, U.S.A.  
GILSONITE, Pipelines, U.S.A.  
HARVARD UNIVERSITY  
HOUSING, U.S.A.  
HYDROELECTRIC POWER STATIONS, Conowingo  
HYDROELECTRIC POWER STATIONS, Pumped storage, Taum Sauk  
HYDROELECTRIC POWER STATIONS, Tennessee Valley  
INDUSTRIAL RESEARCH, U.S.A.  
LITHOGRAPHY, Web-offset, U.S.A.  
LOCOMOTIVES, Diesel, U.S.A.  
LOCOMOTIVES, Diesel-electric, Alaska  
LOCOMOTIVES, Diesel-electric, U.S.A.  
MAN-MADE FIBRES, Dyeing, U.S.A.  
MAN-MADE FIBRES, Manufactures, U.S.A.  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
METALS, Manufactures, Texas  
METALS, Mining, Texas  
MILK, Homogenised, U.S.A.  
MOTOR CARS, Manufactures, U.S.A.  
NATIONAL ACADEMY OF SCIENCES, Washington  
NATIONAL STANDARD REFERENCE DATA SYSTEM  
NATURAL RESOURCES, U.S.A.  
NUCLEAR ENERGY, U.S.A.  
NUCLEAR POWER STATIONS, Hallam  
NUCLEAR POWER STATIONS, U.S.A.  
NUCLEAR REACTORS, Water moderated, U.S.A.  
PAINT, U.S.A.  
PETROLEUM, Industry, U.S.A.

## UNITED STATES

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PLASTICS, Building materials, U.S.A.  
 PLASTICS, Manufactures, U.S.A.  
 PORTS, Baltimore  
 PORTS, Los Angeles  
 PORTS, Port Newark  
 PORTS, San Francisco  
 PORTS, Virginia  
 POTTERY, Industry, U.S.A.  
 POWER STATIONS, Eddystone  
 PRINTING, Education, U.S.A.  
 REFRIGERATION, U.S.A.  
 RIVERS, Floods, Control, Tennessee Valley  
 ROADS, Haulage, U.S.A.  
 ROADS, Kentucky  
 ROADS, U.S.A.  
 RUBBER, Synthetic, Production, United States  
 SALMON, Fishing, Puget Sound  
 SHIPS, Research, U.S.A.  
 STEEL, Industry, U.S.A.  
 TECHNICAL EDUCATION, Adult retraining, U.S.A.  
 TECHNICAL LIBRARIES, U.S.A.  
 TECHNOLOGY, U.S.A.  
 TENNESSEE VALLEY AUTHORITY  
 THEATRES, U.S.A.  
 TOWN AND COUNTRY PLANNING, U.S.A.  
 TOWN PLANNING, U.S.A.  
 TRAFFIC ENGINEERING, U.S.A.  
 TRAMWAYS, Fort Worth  
 TRAMWAYS, Philadelphia  
 TRAMWAYS, Underground, Washington, D.C.  
 TRANSIT EXPRESSWAYS, U.S.A.  
 TRANSPORT, Public, Chicago  
 TRANSPORT, Public, Roads, U.S.A.  
 TRANSPORT, Public, Traffic engineering, U.S.A.  
 TRANSPORT, Public, U.S.A.  
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UNIVERSAL BEAMS, Buildings. See BUILDINGS, Beams, Universal

UNIVERSAL BEAMS, Industrial buildings. See INDUSTRIAL BUILDINGS, Beams, Universal

UNIVERSAL JOINTS. See JOINTS, Constant velocity

UNIVERSAL JOINTS. See JOINTS, Hooke's

UNIVERSAL JOINTS, Transmissions, Motor cars. See MOTOR CARS, Transmissions, Joints, Universal

UNIVERSAL JOINTS, Transmissions, Motor vehicles. See MOTOR VEHICLES, Transmissions, Joints, Universal

UNIVERSAL MACHINE TOOLS, Gearbox components, Motor cars. See MOTOR CARS, Gearboxes, Components, Machine tools, Universal

UNIVERSITIES, Building education. See BUILDING, Education, Universities

UNIVERSITIES, Chemical engineering education. See

CHEMICAL ENGINEERING, Education, Universities

UNIVERSITIES, Chemical engineering research. See CHEMICAL ENGINEERING, Research, Universities

UNIVERSITIES, Civil engineering education. See CIVIL ENGINEERING, Education, Universities

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**V-BELT CONVEYORS. See CONVEYORS, Belt, V-**

**V-BELT DRIVES, Agricultural machinery. See AGRICULTURAL MACHINERY, Drives, V-belt**

**V.F.O. See OSCILLATORS, Variable frequency**

**V.H.F., Radio. See RADIO, V.H.F.**

**V.H.F., Radio, Alarms, Electric power systems. See**

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**V.H.F., Radio, Phase indication, Electric power systems. See**

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**V.H.F., Radio equipment, Aircraft. See AIRCRAFT, Radio equipment, V.H.F.**

**V.H.F., Television. See TELEVISION, V.H.F.**

- VJ. 10] C AIRCRAFT. See AIRCRAFT, Vertical take-off, Types, Entwicklungsring Süd VJ 10] C
- V.L.F., Radio, Navigation systems, Aircraft. See AIRCRAFT, Navigation systems, Radio, V.L.F.
- V.L.F., Radio waves. See RADIO, Waves, V.L.F.
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- VAPOUR FILM, Heat transfer. See HEAT, Transfer, Vapour film
- VAPOUR-LIQUID EQUILIBRIA, Ammonia-Carbon dioxide-water, Urea production. See UREA, Production, Ammonia-Carbon dioxide-water, Vapour-Liquid equilibria
- VAPOUR-LIQUID EQUILIBRIA, High pressure**  
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- VAPOUR-LIQUID EQUILIBRIA, Propane-Ethane-Butane. See BUTANE-ETHANE-PROPANE, Vapour-Liquid equilibria
- VAPOUR-LIQUID SYSTEMS. See LIQUID-VAPOUR SYSTEMS
- VAPOUR PRESSURE, Crystallisation. See CRYSTALLISATION, Vapour pressure
- VAPOUR PRESSURE, Helium. See HELIUM, Vapour pressure

VAPOUR PRESSURE, Temperature determination, Liquid helium. See HELIUM, Liquid, Temperature, Determination, Vapour pressure

VAPOUR SHIELDED ARC WELDING. See WELDING, Arc, Vapour shielded

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REFRIGERATION, Insulation, Vapour diffusion

VAPOURS, Penetration, Thermal insulating materials. See

INSULATING MATERIALS, Thermal, Penetration, Vapour

VARACTORS. See DIODES, Parametric

VARIABLE CAPACITANCE DIODES. See DIODES, Parametric

VARIABLE CAPACITORS. See CAPACITORS, Variable

VARIABLE COMPRESSION, Internal combustion engines. See ENGINES (Internal combustion, Variable compression)

VARIABLE FREQUENCY OSCILLATORS. See

OSCILLATORS, Variable frequency

VARIATIONS, Calculus, Vibrations, Beams. See BEAMS,

Vibrations, Analysis, Variational calculus

VARIATIONS FLOW ANALYSIS, Spinning, Yarns. See YARNS, Spinning, Variations flow analysis

VARNISHED FABRICS. See FABRICS, Varnished

VARNISHES, Bodies, Buses. See BUSES, Bodies, Varnishes

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Determination of the dynamic elastic properties of supported films. R. S. Jackson & G. E. Overend. *Brit. J. of Applied Physics*, 14 (Sep 63) p.575-9. il. refs.

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ELECTRIC MOTORS, Windings, Insulation, Varnishes

VASSALLO, Instituto Professionale. See TURIN, Instituto Professionale Vassallo

VAT DYEING, Fabrics. See FABRICS, Dyeing, Vat

VATS, Wood, Chemical engineering plant. See CHEMICAL ENGINEERING, Plant, Vats, Wood

#### VAUGHAN COLLEGE, Leicester

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Three chemists in the history of metals. M. Schofield. *Metallurgia*, 68 (Jul 63) p.31-2

VAUXHALL CARS. See MOTOR CARS, Types, Vauxhall

VAUXHALL VICTOR CARS. See MOTOR CARS, Types,

Vauxhall Victor

VAUXHALL VICTOR DE LUXE CARS. See ESTATE CARS,

Types, Vauxhall Victor de luxe

VAUXHALL VICTOR DE LUXE CARS. See MOTOR CARS,

Types, Vauxhall Victor de luxe

VAUXHALL VIVA CARS. See MOTOR CARS, Types,

Vauxhall Viva

VAUXHALL VIVA DE LUXE CARS. See MOTOR CARS,

Types, Vauxhall Viva de luxe

VAUXHALL VX 4/90 CARS. See MOTORCARS, Types,

Vauxhall VX 4/90

VECTORS, Analysis, Circuits, A.C. See A.C., Circuits,

Analysis, Vector diagrams

VEGETABLE OILS. See OILS, Vegetable

#### VEGETABLES

Related Headings:

BEANS

BEETROOTS

CABBAGES

CARROTS

MUSHROOMS

PEAS

POTATOES

#### VEGETABLES, Acceptance ratings

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#### VEGETABLES, Packaging

Current trends in prepackaging agricultural produce. P. Seary. *World Crops*, 15 (Jan 63) p.4-8. il.

Produce Packaging Development Association: report on the packaging potential for home grown fruit and vegetables (summary) *Packaging*, 34 (Feb 63) p.50+

#### VEGETABLES, Sauces, Frozen

Vegetables-in-sauces enjoy great success: frozen meals aboard major U.S. airline. *Frozen Foods*, 16 (May 63) p.325-6

#### VEHICLES

Related Headings:

AIRCRAFT

BICYCLES

CARAVANS

HOVERCRAFT

MOTOR CARAVANS

MOTOR CARS

MOTOR CYCLES

MOTOR VEHICLES

SHIPS

TRAILERS

VEHICLES, Astronautics. See ASTRONAUTICS, Vehicles

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Bigger and heavier vehicles: what the new proposals mean.

*Commercial Motor*, 117 (8 Feb 63) p.54-5

Development of special bodywork for bulk haulage. *Transport J.*, 20 (11 Jan 63) p.54-6. il.

How the Common Market might affect British commercial vehicle design. J. F. Moon. *J. & Proc. of Inst. of Road Transport Engrs.*, 17 (Sep 63) p.25+. il.

#### VEHICLES, Commercial

Related Headings:

LORRIES

MOTOR CARS, Transporters

MOTOR COACHES

SHOPS, Retail, Mobile

TRACTORS

VANS

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#### VEHICLES-SUBHEADINGS-Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Kinds of vehicles

*Commercial*

*Delivery*

*Public service*

*Electric*

*Tracked*

*Refrigerated*

*Land*

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#### VEHICLES, Commercial, Bodies

Ford's chassis policy change means better business for bodybuilders. *Commercial Vehicles*, 35 (Oct 63) p.71-83. il.

#### VEHICLES, Commercial, Bodies, Aluminium

Demountable bodies save vehicle loading time ["Dekaloy"] *Motor Body*, 131 (Apr 63) p.32. il.



**VEHICLES, Commercial, Bodies, Manufactures, Directories**

Directory of bodybuilders. Commercial Motor, 117 (3 May 63) p.97-100

**VEHICLES, Commercial, Bodies, Plastics, Reinforced**

Making plastic in bodywork pay its way. S. F. Page. Commercial Vehicles, 37 (Dec 63) p.64+. il.

**VEHICLES, Commercial, Bodies, Plastics, Reinforced—Glass fibre**

One-piece moulded bodywork. S. F. Page. Motor Body, 131 (Apr 63) p.16-17. il.

**VEHICLES, Commercial, Bodies, Wood**

Choosing the right construction for the Continent. S. F. Page. Woodworking Industry, 20 (Jan 63) p.32-3. il.

**VEHICLES, Commercial, Brakes**

Commercial vehicle brakes. Commercial Motor, 117 (8 Feb 63) p.56+

**VEHICLES, Commercial, Brakes, Anti-lock systems**

Anti-lock device would aid brake-torque distribution. P. A. C. Brockington. Commercial Motor, 118 (2 Aug 63) p.43

**VEHICLES, Commercial, Brakes, Hydraulic, Wheel cylinders, Manufactures**

Quantity-production of wheel cylinders for Lockheed brakes. A. W. Astrop. Machinery, 102 (6 Feb 63) p.288-95. il.

**VEHICLES, Commercial, Brakes, Retarders**

Efficient electro-magnetic supplementary brake ["Telma"] Transport J., 20 (12 Apr 63) p.357. il.

Increased safety for commercial vehicles: the Telma electric retarder in Britain. Transport World (Apr 63) p.25. il.

Telma electrical retarder [Trico-Folberth] Passenger Transport, 126 (May 63) p.263+. il.

**VEHICLES, Commercial, Braking, Axle hop, Elimination, Hydraulic cylinder**

Torque eliminator—increases braking efficiency of commercial vehicles [Boys Torquem suspension] Design & Components in Engng. (Jul 63) p.20-2. il.

**VEHICLES, Commercial, Bulk handling**

Matching unloading methods to bulk loading and carrying. S. F. Page. Commercial Vehicles, 37 (Jul 63) p.89-91. il.

**VEHICLES, Commercial, Bulk handling, Equipment**

Equipment for bulkers. P. A. C. Brockington. Commercial Motor, 117 (1 Feb 63) p.100+. il.

**VEHICLES, Commercial, Cabs**

Cab comfort counts. J. F. Moon. Commercial Motor, 117 (3 May 63) p.82+

**VEHICLES, Commercial, Chassis, Testing**

Leaving little to chance: chassis makers put their products to the test. H. B. Cottee. Commercial Motor, 117 (3 May 63) p.88-92. il.

**VEHICLES, Commercial, Containers, Fabrics, Man-made fibres**

Flexible tanks: what prospects? H. B. Cottee. Commercial Motor, 117 (1 Feb 63) p.111+. il.

**VEHICLES, Commercial, Containers, Plastics**

Use of the intermediate plastics bulk containers is on the increase. Commercial Vehicles, 37 (Oct 63) p.30+. il.

**VEHICLES, Commercial, Diesel engines**

British proprietary diesel-engine range. Transport J., 20 (May 63) p.441+. il.

More power from Rootes two-stroke. [3DA. 199] Commercial Motor, 117 (12 Jul 63) p.53. il.

Three-cylinder two-stroke is updated. Oil Engine & Gas Turbine, 31 (Mid Aug 63) p.40-1. il.

**VEHICLES, Commercial, Diesel engines, Cylinders, Liners, Machining, Transfer machines**

Machining cylinder liners: Ex-Cell-O in-line transfer machine operating [Sheepbridge Stokes Ltd.] Automobile Engr., 53 (Aug 63) p.368-72. il.

**VEHICLES, Commercial, Diesel engines, Fuel injection pumps**

Current trends in fuel injection equipment. G. Read & L. Albon. Inst. of Road Transport Engrs. J. & Proc., 16 (Mar 63) p.149+. il.

**VEHICLES, Commercial, Driving, Education, Universities, United States**

University training for drivers. M. Griffith. Commercial Vehicles, 37 (Oct 63) p.26-8. il.

**VEHICLES, Commercial, Driving, Right hand drive**

Preparing for the right. A. J. P. Wilding. Commercial Motor, 117 (22 Feb 63) p.60-1. il.

**VEHICLES, Commercial, Electrical equipment**

Design trends in vehicle electrics. J. A. Cook. Transport J., 20 (Jun 63) p.607+. il.

**VEHICLES, Commercial, Engines, Auxiliary, Liquefied petroleum gas**

For secondary engines fitted to goods vehicles l.p.g. may displace petrol and t.v.o. Commercial Vehicles, 37 (Jul 63) p.33+. il.

**VEHICLES, Commercial, Engines, Temperature control**

Temperature control offers big rewards. P. A. C. Brockington. Commercial Motor, 117 (3 May 63) p.149-52. il.

**VEHICLES, Commercial, Ferry services, Freight transport.**

See FREIGHT, Transport, Road vehicle-Ferry services

**VEHICLES, Commercial, Fires, Prevention**

Preventing fires on goods vehicles. N. C. S. Smith. Commercial Vehicles, 37 (Apr 63) p.22+. il.

**VEHICLES, Commercial, Garages**

Garage planning for fleets. Transport J., 20 (8 Mar 63) p.274

**VEHICLES, Commercial, Garages, Equipment**

Economic selection of garage equipment. Transport J., 20 (8 Mar 63) p.276+. il.

**VEHICLES, Commercial, Gearboxes, Auxiliary**

Auxiliary gearbox to challenge two-speed axles [David Brown splitterbox] Commercial Vehicles, 36 (Feb 63) p.56. il.

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Important design for a 5-speed automotive gearbox, pt.1. R. E. Abinett. Engng. Designer (Nov 63) p.8-15. il.  
Important design criteria for a 5-speed automotive gearbox, pt.2. R. E. Abinett. Engng. Designer (Dec 63) p.3-11. il. refs.

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More and more hot air. E. J. Millen. Commercial Motor, 118 (22 Nov 63) p.46-7. il.

**VEHICLES, Commercial, Loading, Accidents**

Goods vehicle accidents at factories must be checked. V. A. Broadhurst. Commercial Vehicles, 37 (Mar 63) p.29-31. il.

**VEHICLES, Commercial, Loading, Handling, Equipment**

Reduce turn-round delays by improved dock facilities. F. H. Slade. Commercial Vehicles, 36 (Dec 62) p.28+. il.

**VEHICLES, Commercial, Loading, Machinery**

Mechanical load handling. S. F. Page. Motor Body, 130 (Dec 62) p.16-18. il.

**VEHICLES, Commercial, Loading, Television, Closed circuit**

Closed-circuit T.V. aids vehicle turn-round. Commercial Vehicles, 36 (Feb 63) p.57. il.

**VEHICLES, Commercial, Lubrication**

Lubrication all the time. A. J. P. Wilding. Commercial Motor, 117 (15 Feb 63) p.49-51. il.

**VEHICLES, Commercial, Maintenance**

Thoughts on putting out maintenance. E. M. G. Gibbins. Commercial Vehicles, 37 (May 63) p.66-7. il.

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Cost of wear and tear. J. E. Johnson. J. & Proc. of Inst. of Road Transport Engrs., 16 (Dec 62) p.89+

**VEHICLES, Commercial, Maintenance, Equipment**

Shopping around for vehicle servicing equipment. Commercial Vehicles, 37 (May 63) p.70+. il.

**VEHICLES, Commercial, Manufactures**

Centralised and specialised [Ford Motor Co. Ltd., Langley]  
J. W. Taylor. *Transport World* (Apr 63) p.26-7. il.

Dennis Pax range, pt.2: propeller shaft, chassis frame, rear suspension, front axle, steering, brakes, electrical equipment and cab construction. *Automobile Engr.*, 53 (May 63) p.168-75. il.

**VEHICLES, Commercial, Manufactures, Directories**

Directory of vehicle makers. *Commercial Motor*, 117 (3 May 63) p.101

**VEHICLES, Commercial, Noise**

Battle against noise is growing. *Commercial Vehicles*, 37 (Apr 63) p.28. il.

Noisy commercial vehicles?—Baloney! A. Harvard. *Commercial Motor*, 118 (9 Aug 63) p.44+

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Commercial traffic operation and its relationship to maintenance. R. S. Adkins. *Transport J.*, 21 (8 Nov 63) p.528

**VEHICLES, Commercial, Parking**

Will the lorry parks disappear? G. Mitchell. *Commercial Vehicles*, 36 (Jan 63) p.30-1. il.

**VEHICLES, Commercial, Parts, Plastics**

Plastics—their part in road transport's future. *Motor Body*, 131 (Mar 63) p.16-20. il.

**VEHICLES, Commercial, Parts, Storage, Costs**

Cutting down on workshop stores costs. R. Twelvetees. *Commercial Vehicles*, 36 (Dec 62) p.51+. il.

**VEHICLES, Commercial, Rear axles, Housings, Machining**

Kitchen & Wade special-purpose machines for axle casings. *Machinery*, 102 (30 Jan 63) p.250-1. il.

**VEHICLES, Commercial, Road tests**

Score was a score: a review of the past year's road tests. *Commercial Motor*, 117 (3 May 63) p.177-9

**VEHICLES, Commercial, Specifications**

British vehicles for the world [tables] *Commercial Motor*, 117 (3 May 63) p.102+

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Rubber springing for commercial vehicles. A. R. Smee. *Rubber Developments*, 15 no.4 (1962) p.125-8. il.

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Volvo-matic—automatic geared turbine transmission for commercial vehicles. S. O. Kronogard. *Design & Components in Engng.*, (Jun 63) p.40-5. il.

**VEHICLES, Commercial, Transport, Soft drinks. See DRINKS, Soft, Transport, Commercial vehicles****VEHICLES, Commercial, Types, Dennis Pax V, Road tests**

Pax permutation. J. F. Moon. *Commercial Motor*, 117 (12 Apr 63) p.50-3. il.

**VEHICLES, Commercial, Types, Dodge**

Dodge consolidates in medium-heavy field [D.308. D.309. D.310] *Commercial Vehicles*, 37 (May 63) p.57+. il.

Dodge produces 24-ton tractive unit and 20-ton six-wheeler [D.310 & T.310] J. F. Moon. *Commercial Motor*, 118 (8 Nov 63) p.101-3. il.

Dodge range goes up to 15-tons Solo gross. *Commercial Motor*, 117 (5 Apr 63) p.66-7. il.

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Retriever is a low weight six-wheel 20-ton chassis: second lightweight Leyland. *Transport World* (Aug 63) p.25-6. il.

Return of the "Retriever". *Transport J.*, 21 (9 Aug 63) p.130-1. il.

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Low weight with high economy. J. F. Moon. *Commercial Motor*, 118 (9 Aug 63) p.62+. il.

**VEHICLES, Commercial, Types, Scania-Vabis, Road tests**

Forward control the Swedish way. J. F. Moon. *Commercial Motor*, 118 (2 Aug 63) p.44-7. il.

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Problem?: trouble at interfaces. *Rubber & Plastics Weekly*, 144 (30 Mar 63) p.431

**VEHICLES (Delivery)**

Market survey no.1—light delivery vans. *Commercial Motor*, 117 (1 Mar 63) p.70+. il.

**VEHICLES, Delivery, Bakery products. See BAKERY PRODUCTS, Vehicles, Delivery****VEHICLES, Delivery, Battery operated, Milk. See MILK, Vehicles, Delivery, Battery operated****VEHICLES, Electric, Battery operated, Batteries**

Battery electric vehicles in the dairy industry, pt.3: batteries and charges. *Dairy Industries*, 28 (Oct 63) p.758-60. il.

Traction batteries. R. M. Robson. *Public Cleansing*, 53 (Jan 63) p.41-52

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Battery electric vehicles in the dairy industry, pt.4: maintenance. *Dairy Industries*, 28 (Oct 63) p.761+. il.

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Off-the-road vehicles. R. M. Ogorkiewicz. *Chartered Mechanical Engr.*, 10 (Feb 63) p.100-1

Schizophrenic Moke—and first eight-cylinder Austin. *Autocar*, 118 (15 Feb 63) p.266. il. ref.

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"Air car". *Design & Components in Engng.*, (Jun 63) p.49. il.

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Articulated off-the-road vehicles. R. M. Ogorkiewicz. *Engineer*, 216 (13 Dec 63) p.975-80. il. refs.

**VEHICLES, Land, Soil mechanics, Clay, Artificial**

Laboratory experiments in off-road locomotion using artificial clay soil ["Glyben"] B. Mayfield & F. Sherratt. *Engineer*, 215 (28 Jun 63) p.1163-4. il. refs.

**VEHICLES, Milk. See MILK, Vehicles****VEHICLES, Public service**

What the future holds for passenger road transport. R. Cox. *Transport J.*, 20 (8 Feb 63) p.146-7. il.

**VEHICLES, Public service**

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BUSES  
MINIBUSES  
TRAMCARS  
TROLLEY BUSES

**VEHICLES, Public service, Chassis**

British passenger chassis: buyers' guide to types manufactured in this country. *Commercial Motor*, 118 (4 Oct 63) p.104-6. il.

**VEHICLES, Public service, Lamps, Fluorescent, Inverters, Transistor**

Transistors for transport lighting. D. H. Holloway. *Electrical Times*, 143 (13 Jun 63) p.881-3. il.

**VEHICLES, Public service, Operation, Great Britain**

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**VEHICLES, Public service, Parts, Metals**

Progress in metallurgy. L. Sanderson. *Passenger Transport*, 126 (Dec 63) p.678

**VEHICLES, Public service, Transmissions**

Automatic transmission requirements for public-service vehicles. C. H. Curtis. *Transport J.*, 21 (9 Aug 63) p.156+. il.

**VEHICLES, Refrigerated**

Refrigeration in road vehicles. F. L. Levy. *Insulation J.*, 7 (Jan/Feb 63) p.15-16



**VEHICLES, Tracked, Navigation, Polar regions**

Navigation device for steering vehicles on the polar ice-cap.  
H. P. Black. *Instr. of Navigation J.*, 16 (Jul 63) p.375-8.  
il.

**VEHICLES, Wheels**

Related Headings:  
TYRES

VEHICLES, Winter maintenance, Roads. See **ROADS**,  
Maintenance, Winter, Vehicles

VELOCETTE MOTOR CYCLES. See **MOTOR CYCLES**,  
Types, Velocette

VELOCETTE VOGUE MOTOR CYCLES. See **MOTOR CYCLES**, Types, Velocette Vogue

VELOCITY, Effect on damping, Vibrations. See **VIBRATIONS**,  
Damping, Effect of velocity

**VELOCITY, Measurement**

Related Headings:  
STROBOSCOPES

VELOCITY PROFILE, Non-Newtonian fluids, Pipes. See  
PIPES, Non-Newtonian fluids, Velocity profile

VENDING MACHINES, Food. See **FOOD**, Vending machines

VENDING MACHINES, Frozen food. See **FOOD**, Frozen, Vending machines

VENDING MACHINES, Postage stamps. See **POSTAGE STAMPS**, Vending machines

**VENEERS**

Showrooms for veneers. Wood, 28 (Jun 63) p.239. il.

VENETIAN BLINDS. See **BLINDS**, Venetian

**VENEZUELA**

See  
FLATS, Caracas

**VENICE**

See  
POWER DISTRIBUTION, Venice

VENTILATED POLYTHENE FILM. See **FILM**, Polythene,  
Ventilated

**VENTILATION**

Fundamentals of ventilation design. J. K. Page.  
*Architects' J.*, 138 (3 Jul 63) p.45-50. il. refs.

Ventilation requirements in buildings. *Architects' J.*, 138  
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Craft apprenticeship. *Heating & Ventilating Engr.*, 36  
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Technical training and reduced apprenticeship for craft  
apprentices of the heating and ventilating industry. D. H.  
Ingall. *Heating & Ventilating Engr.*, 36 (Apr 63)  
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VENTILATION, Booths, Spraying, Paint. See **PAINT**,  
Spraying, Booths, Ventilation

VENTILATION, Coal mining. See **COAL**, Mining, Ventilation

VENTILATION, Conference rooms, Communications  
engineering. See **COMMUNICATIONS**, Engineering,  
Conference rooms, Ventilation

**VENTILATION, Control systems**

Electronic control in heating and air-conditioning. F. B.  
Rider. *Industrial Electronics*, 1 (Apr 63) p.354-8. il.

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More and better training. G. F. Cutting. *Heating & Air  
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VENTILATION, Embassies. See **EMBASSIES**, Ventilation

VENTILATION, Factories. See **FACTORIES**, Ventilation

VENTILATION, Factories, Brick manufactures. See  
BRICKS, Manufactures, Factories, Ventilation

VENTILATION, Greenhouses. See **GREENHOUSES**, Ventila-  
tion

VENTILATION, Hatcheries, Poultry. See **POULTRY**,  
Hatcheries, Ventilation

VENTILATION, Hospitals. See **HOSPITALS**, Ventilation

**VENTILATION, Italy**

Heating, ventilating and air conditioning practice in Italy.  
G. F. Bertolini. *Heating*, 25 (Jun 63) p.190-2

VENTILATION, Lignite mining. See **LIGNITE**, Mining,  
Ventilation

VENTILATION, Motor cars. See **MOTOR CARS**, Ventilation  
VENTILATION, Office buildings. See **OFFICE BUILDINGS**,  
Ventilation

VENTILATION, Paper board manufacture. See **BOARD**,  
Paper, Manufactures, Ventilation

VENTILATION, Papermaking. See **PAPERMAKING**, Venti-  
lation

**VENTILATION, Pipes, Flow measurement, Pitot tubes**

Exploring flow-patterns in ducts. P. Brennan. *Heating &  
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VENTILATION, Printing works. See **PRINTING**, Works, Venti-  
lation

VENTILATION, Public libraries. See **LIBRARIES**, Public,  
Ventilation

**VENTILATION, Research**

Current and future research at the H.V.R.A. [Heating and  
Ventilation Research Association] (abstracts) N. S.  
Billington. *Heating*, 25 (Apr 63) p.118-20

Improved facilities for heating and ventilation work at the  
Building Research Station. *Heating & Ventilating Engr.*,  
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Recent work on heating and ventilation at the Building  
Research Station. E. Danter. *Instr. of Heating &  
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**VENTILATION, Research, Italy**

Heating, ventilating and air conditioning research in Italy.  
M. Paribeni. *Heating*, 25 (Jun 63) p.183-7. il.

VENTILATION, Roofs, Fires, Buildings. See **BUILDINGS**,  
Fires, Roofs, Ventilation

VENTILATION, Tunnels. See **TUNNELS**, Ventilation

VENTILATION, Underground car parks. See **CAR PARKS**,  
Underground, Ventilation

VENTILATION RATES, Filtration, Sewage treatment. See  
SEWAGE, Treatment, Filtration, Ventilation rates

VENTURI FLUMES. See **FLUMES**, Venturi

VENUS, Flights, Astronautics. See **ASTRONAUTICS**, Flights,  
Venus

**VENUS, Heat radiation, Radiometers, Manufactures**

Solving a problem of machining inaccessible surfaces.  
*Metalworking Production*, 107 (2 Jan 63) p.41. il.

**VEREL**

Another acrylic moves into Europe. *Skinner's Record*, 37  
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**VERNONIA, Seed, Oil**

Vegetable oils pt.12: *vernonia* seed oils. R. C. Bodami &  
F. D. Gunstone. *J. of Science of Food & Agriculture*, 14  
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VERTICAL BOILERS. See **BOILERS**, Vertical

VERTICAL CAR PARKS. See **CAR PARKS**, Vertical

VERTICAL HONING MACHINES, Bores, Oleo legs, Aircraft.  
See **AIRCRAFT**, Oleo legs, Bores, Honing, Machines,  
Vertical

VERTICAL KILNS, Cement. See **CEMENT**, Kilns, Vertical

VERTICAL LANDING, Aircraft carriers. See **AIRCRAFT CARRIERS**, Landing, Vertical

VERTICAL LIFT BRIDGES, Railways. See **RAILWAYS**,  
Bridges, Vertical lift

VERTICAL PIPES, Annular flow, Air-Water. See **AIR-WATER**, Flow, Annular, Pipes, Vertical

VERTICAL PIPES, Flow, Gas-liquid systems. See **GAS-LIQUID SYSTEMS**, Flow, Pipes, Vertical

VERTICAL PLATE FREEZERS. See **FREEZERS**, Plate,  
Vertical

VERTICAL TAKE OFF AIRCRAFT. See **AIRCRAFT**,  
Vertical take-off

VERTICAL TAKE OFF FIGHTER AIRCRAFT. See  
FIGHTER AIRCRAFT, Vertical take off

VERTICAL TUBE EVAPORATORS. See **EVAPORATORS**,  
Vertical tube

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PORTS, Melbourne  
PORTS, Portland (Victoria)

**VICTORIA (London)**

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TOWN PLANNING, London, Victoria

**VICTORIA LINE, London, Railways. See RAILWAYS, Underground, London, Victoria line****VICTORY-JONCKHEERE MOTOR COACHES. See MOTOR COACHES, Types, Victory-Jonckheere****VIDEO AMPLIFIERS. See AMPLIFIERS, Video****VIDEO INTEGRATION, Echo ranging displays. See ECHO RANGING, Displays, Video integration****VIDEO INTEGRATION, Radar displays. See RADAR, Displays, Video integration****VIDEOTAPE RECORDERS**

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PORTS, Virginia

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VISCOSITY, Hydraulic fluids. See HYDRAULIC MACHINERY, Fluids, Viscosity

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VISCOSITY, Lubricating oils. See LUBRICATING OILS, Viscosity

VISCOSITY, Measurement, Instruments

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VISCOUS FLUIDS, Food processing. See FOOD, Processing, Viscous fluids



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**VOLUME DISPENSERS, Food processing.** See FOOD, Processing, Volume dispensers

**VOLUTES, Centrifugal pumps.** See PUMPS, Centrifugal, Volutes

**VOLVO 121 ESTATE CARS.** See ESTATE CARS, Types, Volvo 121

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**VORTICES, Surfaces, Liquids.** See LIQUIDS, Surfaces, Vortices

**VORTICES, Trailing, Flow velocities, Propellers, Pipes.** See PIPES, Propellers, Velocities, Trailing vortices

**VORTICES, Vibrations, Heat exchangers.** See HEAT, Exchangers, Vibrations, Vortices

**VULCANISATION, Moulded rubber, Soles, Footwear.** See FOOTWEAR, Soles, Rubber, Moulded, Vulcanisation

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**WAGONS, Railways.** See RAILWAYS, Wagons

**WAGONS, Railways, Coal mining.** See COAL, Mining, Railway wagons

**WAGONS, Railways, Coal preparation plant.** See COAL, Preparation, Plant, Railways, Wagons

**WAGONS, Railways, Loading, Coal.** See COAL, Loading, Railways, Wagons

**WAGONS, Railways, Transport, Ores.** See ORES, Transport, Railways, Wagons

**WAITING ROOMS, Mobile, Airports.** See AIRPORTS, Waiting rooms, Mobile

**WALES**

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CALCITE, Mining, Flintshire

CIVIC CENTRES, Cwmbran

CIVIC CENTRES, Neath

COASTAL WORKS, Aberthaw

DOCKS, Swansea

GAS (Town) Distribution, Wales

GAS (Town) Pipelines, Wales

HYDROELECTRIC POWER STATIONS, Pumped storage, Ffestiniog

HYDROELECTRIC POWER STATIONS, Rheidol

NUCLEAR POWER STATIONS, Wylfa

PORTS, Barry

RAILWAYS, Ffestiniog

RAILWAYS, Wales

ROADS, South Wales

THEATRES, Cardiff

TOWN PLANNING, Connah's Quay

TOWN PLANNING, Cwmbran

WATER, Engineering, South Wales

WELSH COLLEGE OF ADVANCED TECHNOLOGY

**WALKING BEAM TRANSFER SYSTEMS, Centring machines.** See CENTRING, Machines, Transfer systems, Walking beam

**WALKING BEAM TRANSFER SYSTEMS, Facing machines.** See FACING, Machines, Transfer systems, Walking beam

**WALKING DRAGLINE EXCAVATORS.** See EXCAVATORS, Dragline, Walking

**WALKING DRAGLINE EXCAVATORS, Tin mining.** See TIN, Mining, Excavators, Dragline, Walking

**WALL EFFECT, Liquid maldistribution, Packed columns.** See PACKED COLUMNS, Liquid maldistribution, Wall effect

**WALL ELECTRIC HEATING, Buildings.** See BUILDINGS, Heating, Electric, Wall

**WALL HEAT FLUX, Effect on forced convection, Pipes.** See PIPES, Convection, Forced, Effect of wall heat flux

**WALL HEAT FLUX, Heat transfer, Turbulent flow, Pipes.** See PIPES, Flow, Turbulent, Heat transfer, Wall heat flux

**WALLACH REARRANGEMENT.** See p-HYDROXYAZOBENZENE, Production, Azoxybenzene

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**WALLPAPERS**

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# **WALTHAMSTOW**

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**WATER, Engineering, Walthamstow**

# **WANDSWORTH**

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**MUSEUM OF BRITISH TRANSPORT**

**WANKEL ENGINES.** See **ENGINES, Rotary**

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WAREHOUSES, Storage, Glassware, Laboratories. See LABORATORIES, Glassware, Storage, Warehouses  
 WAREHOUSES, Storage, Machine tools. See MACHINE TOOLS, Warehouses

WAREHOUSES, Storage, Non-ferrous metals. See NON-FERROUS METALS, Storage, Warehouses

WAREHOUSES, Storage, Paint. See PAINT, Storage, Warehouses

WAREHOUSES, Storage, Shoes. See SHOES, Warehouses

WAREHOUSES, Storage, Soft drinks. See DRINKS, Soft, Warehouses

WAREHOUSES, Storage, Steel. See STEEL, Storage, Warehouses

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WARM AIR, Heating, Houses. See HOUSES, Heating, Warm air

WARM AIR, Oil-fired heating, Factories, Wire manufactures. See WIRES, Manufactures, Factories, Heating, Oil fired, Warm air

WARM AIR, Oil-fired heating, Industrial buildings. See INDUSTRIAL BUILDINGS, Heating, Oil fired, Warm air  
 WARM AIR, Oil-fired heating, Workshops, Painting, Bodies, Motor vehicles. See MOTOR VEHICLES, Bodies, Painting, Workshops, Heating, Oil-fired, Warm air  
 WARNING STATIONS, Ballistic missiles. See MISSILES, Ballistic, Warning, Stations  
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WARP BREAKAGE, Weaving. See WEAVING, Warp breakage

WARP KNIT FABRICS. See FABRICS, Warp knit

WARP KNIT NYLON, Fabrics, Shirts. See SHIRTS, Fabrics, Nylon, Warp knit

WARP KNIT TERYLENE, Curtains. See CURTAINS, Terylene, Warp knit

WARP KNIT WOOLLEN FABRICS. See FABRICS, Woollen, Warp knit

WARP KNITTING. See KNITTING, Warp

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WARP KNITTING, Net, Curtains. See CURTAINS, Net, Knitting, Warp

WARP STOP MOTION, Looms, Cotton. See COTTON, Looms, Warp stop motion

WARPING, Nylon yarns. See YARNS, Nylon, Warping

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WASHING, Coal. See COAL, Cleaning

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**WASTE**

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WASTE, Agricultural, Methane production. See METHANE, Production, Agricultural wastes

WASTE, Chemicals. See CHEMICALS, Waste

WASTE, Coal mining. See COAL, Mining, Waste recovery

WASTE, Paper. See PAPER, Waste

WASTE, Paper, Paper board manufacture. See BOARD, Paper, Manufactures, Waste paper

WASTE, Ring frames, Spinning, Yarns. See YARNS, Spinning, Ring frames, Waste

WASTE, Water. See WATER, Waste

WASTE, Wood, Firing, Water tube boilers. See BOILERS, Water tube, Wood waste fired

WASTE, Wool manufactures. See WOOL, Manufactures, Waste

WASTE HEAT, Utilisation, Absorption, Refrigerators. See REFRIGERATORS (Absorption) Waste heat utilisation

WASTE HEAT RECOVERY. See HEAT, Recovery

WASTE HEAT RECOVERY, Drying, Refractories. See REFRACTORIES, Drying, Waste heat recovery

WASTE HEAT RECOVERY, Gas turbines, Alternators. See ALTERNATORS, Gas turbines, Waste heat recovery

WASTE HEAT RECOVERY, Steam plant, Steel production.

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WASTE HEAT RECOVERY, Tankers, Ships. See TANKERS, Ships, Waste heat recovery

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- Watch and clockmakers around the Commonwealth. T. D. Forbes. *Horological J.*, 104 (Dec 62) p.764-5. il.

**WATCHES, Self-winding**

- Girard-Perregaux 8026 automatic. *Horological J.*, 104 (Dec 62) p.750-1. il.

**WATCHES, Timing equipment**

- New approach to electronic watch timing. N. T. J. Bevan. *Horological J.* (Feb 63) p.51-2. il.

**WATER**

## Related Headings:

AQUEOUS  
 FEEDWATER  
 GROUND WATER  
 HYDROLOGY  
 ICE  
 MOISTURE  
 SOLUTIONS, Aqueous

**WATER-SUBHEADINGS-Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

## Research

## Physical properties

*Droplets*  
*Motion*  
*Waves*  
*Flow*  
*Destratification*

## Chemical properties

*Adsorption*  
*Constituents*  
*Oxygen content*  
*Suspended solids*

## Technical activities

*Analysis*  
*Determination of...*  
*Measurement*  
*Meters*  
*Level indicators*  
*Engineering*  
*Pumping*  
*Pumps*

**WATER-SUBHEADINGS-Synopsis-cont.***Purification*

*Filtration*  
*Filters*  
*Distillation*  
*Extraction*  
*Evaporation*  
*Evaporators*  
*Sterilisation*

*Spraying*  
*Aeration*  
*Irradiation*  
*Pollution*

*Distribution*  
*Pipes*  
*Mains*  
*Pipelines*  
*Storage*  
*Tanks*  
*Towers*

## Use

*Resources*  
*Wells*  
*Supplies*  
*Conservation*  
*Waste*

## Particular uses

*Power generation*  
*Turbines*  
*Heating*  
*Heaters*

## Kinds of water by property or use

*Surface*  
*Tidal*  
*Boiling*  
*Drinking*  
*Industrial*  
*Saline*

WATER, Absorption, Coke. See COKE, Water absorption  
 WATER, Absorption, Effect on oil impregnated paper insulation. See PAPER, Oil impregnated, Insulation, Effect of water absorption

WATER, Absorption, Leather, Soles, Footwear. See FOOTWEAR, Soles, Leather, Water absorption

WATER, Absorption (Packed columns) Acetone vapour. See ACETONE, Vapour, Absorption (Packed columns) Water

WATER, Absorption (Packed columns) Ammonia. See AMMONIA, Absorption (Packed columns) Water

WATER, Absorption, Paint. See PAINT, Water absorption

WATER, Absorption, Thermoplastics. See THERMOPLASTICS, Water absorption

**WATER, Adsorption, Fixed beds, Alumina**

Fixed bed adsorption from a high concentration feed. J. H. Bowen & M. B. Donald. *Chemical Engng. Science*, 18 (Sep 63) p.599-611. il. refs.

**WATER, Aeration, Oxygen absorption**

Oxygen absorption from diffused air. J. K. Bewtra. *Effluent & Water Treatment J.*, 3 (Apr 63) p.223-4

**WATER, Boiling, Pressure gradient, Friction, Equations**

Friction pressure-gradient during the flow of boiling water. D. Chisholm. *Engng. & Boiler House Rev.*, 78 (Aug 63) p.287-9. refs.

WATER, Brewing. See BREWING, Water

WATER, Canals. See CANALS, Water



**WATER, Chilled, Cooling systems, Cigarette manufacture.**

See CIGARETTES, Manufactures, Cooling systems, Chilled water

**WATER, Clay-bonded sand, Moulds.** See MOULDS, Sand, Clay-bonded, Water content

**WATER, Compensation, Fuel oil tanks, Stabilisation, Ships.**

See SHIPS, Stabilisation, Tanks, Fuel oil, Compensation, Water

**WATER, Conservation**

Multi-purpose water conservation development projects in U.S.A., U.S.S.R. and Australia with special reference to the Snowy Mountains scheme. Sir William Hudson. *Production Engr.*, 42 (Feb 63) p.77-83. il.

Water conservation & pollution prevention. W. F. Lester. *Effluent & Water Treatment J.*, 3 (Feb 63) p.81-3

**WATER, Conservation, Australia**

New body will help Australia deal with water problems on national basis. *Water & Water Engng.*, 67 (Jan 63) p.26-8

**WATER, Conservation, Chemical engineering.** See CHEMICAL ENGINEERING, Water conservation

**WATER, Conservation, Great Britain**

Water conservation and pollution prevention. W. F. Lester. *Inst. of Sewage Purification J. & Proc.*, pt.4. (1963) p.323-30

**WATER, Constituents, Coke.** See COKE, Constituents, Water

**WATER, Cooling systems, Refining, Petroleum.** See PETROLEUM, Refining, Cooling systems, Water

**WATER, Corrosion, Aluminium.** See ALUMINIUM, Corrosion, Water

**WATER, Crystallisation, Gypsum.** See GYPSUM, Crystallisation, Water

**WATER, Crystallisation, Monobasic, ammonium phosphate.**

See AMMONIUM PHOSPHATE, Monobasic, Crystallisation, Water

**WATER, Destratification, Bubble guns**

Bubbles overturn a lakeland tarn. *Effluent & Water Treatment J.*, 3 (Apr 63) p.225-6. il.

**WATER, Determination, Brown coal.** See COAL, Brown, Determination of water

**WATER, Determination, Cement.** See CEMENT, Determination of water

**WATER, Determination of dissolved oxygen, Polarography**

Operation of a wide bore polarograph continuous "dissolved oxygen" recorder. A. A. Wood. *Effluent & Water Treatment J.*, 3 (Jan 63) p.23-5. il.

**WATER, Determination of phosphates, Spectrophotometry, Reagents, Vanadium phosphomolybdate**

Method for determining orthophosphate in water. D. C. Abbott, G. E. Emsden & J. R. Harris. *Analyst*, 88 (Oct 63) p.814-16. refs.

**WATER, Development, Photography.** See PHOTOGRAPHY, Development, Water

**WATER, Dissolution, Monobasic ammonium phosphate.** See AMMONIUM PHOSPHATE, Monobasic, Dissolution, Water

**WATER, Dissolution,  $\beta$ -Naphthol.** See  $\beta$ -NAPHTHOL, Dissolution, Water

**WATER, Distillation, Evaporators (Heat recovery)**

Distilled water from waste heat. *Oil Engine & Gas Turbine*, 30 (Mid Feb 63) p.327. il.

**WATER, Drainage, Papermaking machines.** See PAPER-MAKING, Machines, Water drainage

**WATER, Drinking, Determination of detergents**

Rapid test for anionic detergents in drinking water. D. C. Abbott. *Analyst*, 88 (Mar 63) p.240-2. refs.

**WATER, Drinking, Determination of strontium, Spectroscopy, X-ray fluorescence**

Determination of strontium in tap-water by x-ray fluorescence spectrometry. R. G. Stone. *Analyst*, 88 (Jan 63) p.56-8

**WATER, Drinking, Radioactivity**

Radioactivity in drinking water in the United Kingdom: 1962 results. *Brit. Waterworks Ass. J.*, 45 (Oct 63) p.730-6. il. refs.

**WATER, Drinking, Services, Buildings.** See BUILDINGS, Water, Drinking

**WATER, Drinking, Sterilisation**

Sterile drinking water [Worthington Pasteurizer] *Steam Engr.*, 32 (Aug 63) p.386-7. il.

**WATER, Droplets, Formation, Needles, Hypodermic, Vibrating**

Improved vibrating capillary device for producing uniform water droplets of 15 to 500 $\mu$ m radius. B. J. Mason, O. W. Jayaratne & J. D. Woods. *J. of Scientific Instruments*, 40 (May 63) p.247-9. il. refs.

**WATER, Engineering**

Current problems of water supply. L. H. Brown. *Water & Water Engng.*, 67 (Jun 63) p.227-9

Filtration and reservoirs—the lesson of Zermatt. *Contractors' Record* (18 Apr 63) p.14

Preparation of sewerage and water supply schemes. R. P. Whiting. *Consulting Engr.*, 23 (Jan 63) p.66-7. il.

**WATER, Engineering**

Related Headings:

MARSHES, Water engineering

RESERVOIRS

SEA, Water

**WATER, Engineering, Bacteriology**

Routine water bacteriology & its influence on engineering practices. N. P. Burman. *Instn. of Water Engrs. J.*, 17 (Nov 63) p.551-63. refs.

**WATER, Engineering, Barriers, Soil, Grouting**

E.T.F.E. membrane grouting process. *Water & Water Engng.*, 67 (Jul 63) p.283-4. il.

Grout screen cuts cost of sheetpiling. *Engineering*, 196 (30 Aug 63) p.268-9. il.

Underground wall—self-compensating membrane. *Building Engr.*, 81 (Sep 63) p.194-5. il.

**WATER, Engineering, California**

California State water project. I. B. Mackintosh. *Engineering*, 196 (13 Dec 63) p.740. il.

**WATER, Engineering, East Germany**

£10 million scheme in East Germany for harnessing the Harz rivers. A. Ender. *Water & Water Engng.*, 67 (Nov 63) p.425-30. il.

**WATER, Engineering, Effect of low temperature**

Arctic conditions in rural Devon. R. T. Shears. *Brit. Waterworks Ass. J.*, 45 (Mar 63) p.190-5. il.

"Big freeze". *Brit. Waterworks Ass. J.*, 45 (Mar 63) p.201-46. il.

Frost in the London area. W. M. L. Roberts. *Brit. Waterworks Ass. J.*, 45 (Mar 63) p.184-6

Maintaining consumer service. F. N. Green. *Brit. Waterworks Ass. J.*, 45 (Mar 63) p.187-9. il.

**WATER, Engineering, Exeter**

Waterworks reconstruction scheme at Exeter. J. Brierley. *Water & Water Engng.*, 67 (Jun 63) p.213-18. il.

**WATER, Engineering, Exmouth**

Exmouth water undertaking. *Effluent & Water Treatment J.*, 3 (Apr 63) p.230-1. il.

**WATER, Engineering, Great Britain**

Control of water supply and conservation in Great Britain. *Nature*, 197 (26 Jan 63) p.321-3

**WATER, Engineering, Hong Kong**

Hong Kong to convert inlet into 30,000m. gallon storage reservoir. *Surveyor*, 122 (19 Jan 63) p.83-4

Hong Kong water scheme nears completion. *Contract J.*, 194 (22 Aug 63) p.887-8. il.

New plans to supplement Hong Kong's water supply. *Water & Water Engng.*, 67 (Nov 63) p.441-3

Plover Cove reservoir scheme, Hong Kong. *Water & Water Engng.*, 67 (Feb 63) p.52-3

**WATER, Engineering, Hong Kong—cont.**

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Plover Cove water scheme, Hong Kong. Engineer, 215 (18 Jan 63) p.140. il.

Plover Cove will store 30,000 million gallons to relieve Hong Kong's water shortage. Consulting Engr., 23 (Feb 63) p.181. il.

**WATER, Engineering, Indus Basin**

Indus Basin scheme. Muck Shifter & Bulk Handler, 71 (Mar 63) p.83-9. il.

**WATER, Engineering, Inspectors**

Turncocks and inspectors. J. S. M. Willis. Brit. Waterworks Ass. J., 45 (Nov 63) p.761-2

**WATER, Engineering, Land use**

Planned development to meet the growing demand for water (summary) A. G. McLellan. Surveyor, 122 (9 Feb 63) p.171-2

Water and its impact on land use: extracts from "Growing demand for water and its impact on land use". A. G. McLellan. Builder, 204 (8 Feb 63) p.289

**WATER, Engineering, Leicestershire**

£4½m Midland water works scheme is nearly complete. Municipal Engng., 140 (16 Aug 63) p.1232-3. il.

**WATER, Engineering, Liquid fuelled engine testing installations, Rockets. See ROCKETS, Liquid fuelled, Engines, Testing, Installations, Water engineering****WATER, Engineering, Loch Lee**

Loch Lee water scheme. S. R. Smith. Chartered Municipal Engr., 90 (Jul 63) p.213-17. il.

**WATER, Engineering, Loch Lomond**

Loch Lomond water supply scheme. R. A. Peel. Dyer, Textile Printer, Bleacher & Finisher, 130 (18 Oct 63) p.609

**WATER, Engineering, Makerfield**

Design of a comprehensive supply scheme for the area of the Makerfield Water Board. D. Sherlock. Instn. of Water Engrs. J., 17 (Nov 63) p.535-50. il.

**WATER, Engineering, Northumberland**

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**WATER, Engineering, Oxford**

Swinford source works of the Oxford Corporation. Brit. Waterworks Ass. J., 45 (Nov 63) p.755-60. il.

**WATER, Engineering, Perth**

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Perth water supply scheme will treat 5 million gpd. Municipal Engng., 140 (1 Feb 63) p.134. il.

**WATER, Engineering, Plumbing**

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**WATER, Engineering, Plumbing, Inspectors**

Death of plumbing inspectors wonder at £650 p.a.! Brit. Waterworks Ass. J., 45 (Jun 63) p.495-7

**WATER, Engineering, Safety**

Safety in waterworks. L. Livesey. Brit. Waterworks Ass., 45 (Sep 63) p.654-61

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Scottish section: Presidential address. J. R. Whyte. J. of Instn. of Water Engrs., 17 (Aug 63) p.373-80

Water service in Central Scotland: report of the Scottish Water Advisory Committee. Brit. Waterworks Ass. J., 45 (Jul 63) p.519-22. il.

**WATER, Engineering, South Wales**

Meeting the growing water demands of South Wales. Municipal J., 71 (17 May 63) p.1451-2. il.

**WATER, Engineering, Staffordshire**

Inauguration of the Tittesworth reservoir scheme. Brit. Waterworks Ass. J., 45 (Aug 63) p.602-12. il.

**WATER, Engineering, Surrey**

Scheme to tap artesian wells at Fetcham Springs will produce 3mgd. Municipal Engng., 140 (3 May 63) p.604-5. il.

**WATER, Engineering, Sutton (Surrey)**

Hundred years of service, 1863-1963: centenary of the Sutton District Water Company. Brit. Waterworks Ass., 45 (Sep 63) p.662-70. il.

**WATER, Engineering, Swedru**

Ghana water contract for British Consortium. Pumping, 5 (Jul 63) p.392-3

Ghana water contract: pumps: water treatment: pipe. Fluid Handling (May 63) p.153-4

Swedru and district water supply, Ghana. Water & Water Engng., 67 (Jun 63) p.230-1. il.

**WATER, Engineering, Tees Valley**

Broken Scar—Gately raw water scheme of the Tees Valley and Cleveland Water Board. Water & Water Engng., 67 (Nov 63) p.431-5. il.

**WATER, Engineering, Walthamstow**

Proposed Coppermills filtration works and pumping station of the Metropolitan Water Board. Water & Water Engng., 67 (Sep 63) p.349-52

**WATER, Engineering, Wigton**

West Cumberland Water Board's Wigton area augmentation scheme. Water & Water Engng., 67 (Aug 63) p.312-13. il.

**WATER, Engineering, Workshops**

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**WATER, Engineering, Yorkshire**

Yorkshire Derwent scheme. A. B. Baldwin. Fluid Handling, 13 (Dec 62) p.355-60. il.

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Yorkshire River Derwent water scheme: work advances on three-year project. Contract J., 191 (28 Feb 63) p.997-8. il.

**WATER, Evaporators, Vertical tube, Scale**

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**WATER, Extraction, Gravel beds**

River Dart gravel abstraction scheme. Water & Water Engng., 67 (Mar 63) p.87-8. il.

**WATER, Filters, Diatomite**

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**WATER, Filtration**

Filtration—fact & fiction. K. J. Ives. Fluid Handling (Apr 63) p.122-4

**WATER, Filtration, Plant**

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**WATER, Flow, Parallel, Densimetric exchange**

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WATER, Food processing. See FOOD, Processing, Water  
WATER, Gas lift absorption of carbon dioxide. See CARBON DIOXIDE, Absorption (Gas lifts) Water

WATER, Gold surfaces. See GOLD, Surfaces, Water



**WATER, Heaters**

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**WATER, Heaters, Gas, Castings, Brass, Drilling, Machines, Turret**

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**WATER, Heaters, Gas, Standards**

Water heating standard revision. Gas World, 158 (28 Sep 63) p.376

**WATER, Heating, Boilers, Stresses**

Injurious stresses in cast iron sectional boilers. E. Ingham. Heating & Ventilating Engr., 37 (Oct 63) p.191-4

**WATER, Heating, Gas**

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WATER, Heating, Houses. See HOUSES, Water, Heating

WATER, Heating, Housing. See HOUSING, Water, Heating

**WATER, Heating, Mixing valves, Thermostatic**

Control of hot water by mixing valves. Gas, 26 (Feb 63) p.7-8. il.

WATER, Heavy, Accessibility of hydroxyl groups, Cellulose film. See FILM, Cellulose, Hydroxyl groups, Accessibility to heavy water

WATER, Hot, Oil fired heating. See BUILDINGS, Heating, Oil fired, Hot water

WATER, Hydraulic machinery. See HYDRAULIC MACHINERY, Water-operated

**WATER, Industrial, Recovery**

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**WATER, Industrial, Treatment**

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WATER, Infusion, Dust, Coal mining. See COAL, Mining, Dust, Water infusion

WATER, Injection, Air blasting, Coal mining. See COAL, Mining, Blasting, Air, Water, Injection

WATER, Intakes, Cooling systems, Nuclear power stations. See NUCLEAR POWER STATIONS, Cooling systems, Water intakes

**WATER, Irradiation, Gamma rays, Scattering**

Angular and energy distributions of  $\gamma$ -radiation scattered in water and iron. Yu. A. Kazanskii. Reactor Science & Technology, 17 (Feb 63) p.89-95. il. refs.

WATER, Laboratories. See LABORATORIES, Water

**WATER, Level indicators, Capacitance detectors**

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**WATER, Mains, Laying**

Problems of mains extensions. R. S. Harland. Brit. Waterworks Ass. J., 45 (Oct 63) p.681-96

**WATER, Mains, Leaks, Testing, Nitrous oxide**

Note on the nitrous oxide method of leak detection [appendix to "Testing of newly laid water mains"] J. R. Fairbank. Water & Water Engng., 67 (Jan 63) p.17-18. refs.

**WATER, Mains, Pressure distribution, Analysis, Computers**

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WATER, Meters, Metering, District heating. See DISTRICT HEATING, Metering, Water meters

**WATER, Oxygen content, Effect of mud**

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**WATER, Oxygen content, Effect of plants**

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Pipelining completed on the Yorkshire Derwent aqueduct. Water & Water Engng., 67 (Oct 63) p.395-7. il.

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**WATER, Pipelines, Junctions, Flow**

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**WATER, Pipelines, River crossings, Underwater**

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**WATER, Pollution**

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RADIOACTIVITY, Effluents, Aqueous

**WATER, Pollution, Detergents**

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**WAVEFORMS, Sinusoidal, Approximation, Stepped waveforms**

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**WAVEFORMS**, Staircase, Generators, Transistor, Counter circuits. See **COUNTERS**, Circuits, Waveforms, Staircase, Generators, Transistor

**WAVEFORMS, Tape recorded, Display, Cathode ray oscilloscopes**

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**WAVEFUNCTIONS**, Molecules. See **MOLECULES**, Wavefunctions

**WAVEGUIDES**

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**WAVEGUIDES**

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**WAVEGUIDES**, Branching systems, Relay systems, Microwave radio. See **RADIO**, Microwave, Relay systems, Branching systems, Waveguides

**WAVEGUIDES**, Calibration, Radiometers, Millimetre wave frequency. See **MILLIMETRE WAVE FREQUENCY**, Radiometers, Calibration, Waveguides

**WAVEGUIDES, Circulators, Four-port**

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**WAVEGUIDES**, EH<sub>11</sub> modes, Pulse shortening, Linear electron accelerators. See **ACCELERATORS**, Electron, Linear, Pulse shortening, Waveguides, EH<sub>11</sub> modes

**WAVEGUIDES**, Filters. See **FILTERS**, Frequency, Waveguide

**WAVEGUIDES**, Frequency modulation, Telephony transmission. See **TELEPHONY**, Transmission, Frequency modulation, Waveguides

**WAVEGUIDES, H<sub>01</sub> modes, Q values, Measurement**

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**WAVEGUIDES, Loaded, Ferrite, Loss properties**

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**WAVEGUIDES, Loaded, Semiconductors, Transverse magnetic fields, Propagation**

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BOLOMETERS, Transverse film

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**WAVEMAKING, Hovercraft. See HOVERCRAFT, Wavemaking****WAVEMETERS, Heterodyne. See FREQUENCY, Meters, Heterodyne****WAVES, H.F. radio. See RADIO, H.F., Waves****WAVES, Impedance, Microwave propagation. See MICRO-WAVES, Propagation, Wave impedance****WAVES, Longitudinal, Wires. See WIRES, Waves, Longitudinal****WAVES, Motion, Speed loss, Ships. See SHIPS, Speed loss (Wave motion)****WAVES, Propagation, Analysis, Transfer functions**

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**WAVES, Radio. See RADIO, Waves****WAVES, Sea. See SEA, Waves****WAVES, Ships. See SHIPS, Waves****WAVES, Shock. See SHOCK WAVES****WAVES, Shock, Effect on pressure distribution, Transonic aerofoils. See AEROFOILS, Transonic, Pressure distribution, Effect of shock wave-turbulent boundary layer interaction****WAVES, Shock, Supersonic aircraft. See AIRCRAFT, Supersonic, Shock waves****WAVES, Sine. See WAVEFORMS, Sinusoidal****WAVES, Water. See WATER, Waves****WAXES, Polishes. See POLISHES, Waxes****WEALDEN CLAY, Bricks. See BRICKS (Wealden clay)****WEAPONS**

Related Headings:

GUNS

MINES, Ordnance

MISSILES

**WEAPONS, Fusing circuits, Hazards, Induced r.f. current, Measurement**

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**WEAPONS, Guided. See MISSILES****WEAPONS, Manufactures, Safety**

Military system of accident prevention. A. Highfield. *Brit. J. of Industrial Safety*, 6 (Spring 63) p.5-8. refs.

**WEAPONS, Nuclear. See NUCLEAR WEAPONS****WEAPONS RESEARCH ESTABLISHMENT, Australia. See AUSTRALIA, Weapons Research Establishment****WEAR, Abrasion, Antimony. See ANTIMONY, Abrasion, Wear****WEAR, Abrasion, Bismuth. See BISMUTH, Abrasion, Wear****WEAR, Cotton, Fabrics. See FABRICS, Cotton, Wear****WEAR, Metals. See METALS, Wear****WEAR, Pipelines, Coal, Power stations. See POWER STATIONS, Coal, Pipelines, Wear****WEAR, Studies, Radioisotope tracers**

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**WEAR, Vibration milling, Metals, Powders. See POWDERS, Metals, Vibration milling, Wear****WEATHER. See METEOROLOGY****WEATHER, Protection, Building. See BUILDING, Weather protection****WEATHER ROUTE PLANNING, Shipping. See SHIPPING, Route planning, Weather****WEATHERING, Fibres, Wool. See WOOL, Fibres, Weathering****WEATHERING, Paint. See PAINT, Weathering****WEATHERING, Titanium dioxide, Pigments, Paint. See PAINT, Pigments, Titanium dioxide, Weathering****WEATHERVANES (Cathedrals) Copper**

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**WEAVING**

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**WEAVING**

Related Headings:

LOOMS

**WEAVING, Cashmere wool fabrics. See FABRICS, Cashmere-Wool, Weaving****WEAVING, Check woollen fabrics. See FABRICS, Woollen, Check, Weaving****WEAVING, Colour**

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**WEAVING, Cord fabrics. See FABRICS, Cord, Weaving****WEAVING, Cotton, Fabrics. See FABRICS, Cotton, Weaving****WEAVING, Crammed line stripe woollen fabrics. See FABRICS, Woollen, Stripe, Crammed line, Weaving****WEAVING, Diagonal design, Woollen fabrics. See FABRICS, Woollen, Diagonal design, Weaving****WEAVING, Elastic fabrics. See FABRICS, Elastic, Weaving****WEAVING, Fancy check fabrics. See FABRICS, Check, Fancy, Weaving****WEAVING, Hand, P.V.C., Fabrics. See FABRICS, P.V.C., Weaving, Hand****WEAVING, Reversible check woollen fabrics, Overcoatings. See OVERCOATINGS, Fabrics, Woollen, Check, Reversible, Weaving****WEAVING, Rib fabrics. See FABRICS, Rib, Weaving****WEAVING, Saxony woollen fabrics, Suitings. See SUITINGS, Fabrics, Woollen, Saxony, Weaving****WEAVING, Shetland tweeds. See TWEEDS, Shetland, Weaving****WEAVING, Stripe, Woollen fabrics. See FABRICS, Woollen, Stripe, Weaving**



WEAVING, Tweed. See TWEEDS, Weaving

#### WEAVING, Warp breakage

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WEAVING, Woollen—Angora fabrics. See FABRICS, Woollen—Angora, Weaving

WEAVING, Woollen fabrics. See FABRICS, Woollen, Weaving

WEAVING, Woollen fabrics, Dresses. See DRESSES, Fabrics, Woollen, Weaving

WEAVING, Woollen fabrics, Dressing gowns. See DRESSING-GOWNS, Fabrics, Woollen, Weaving

WEAVING, Woollen fabrics, Scarves. See SCARVES, Woollen, Weaving

WEAVING, Woollen fabrics, Suitings. See SUITINGS, Fabrics, Woollen, Weaving

WEAVING, Worsted fabrics, Costumes. See COSTUMES, Fabrics, Worsted, Weaving

WEAVING, Worsted fabrics, Suitings. See SUITINGS, Fabrics, Worsted, Weaving

WEB DRYERS, Rotary machines, Printing. See PRINTING, Machines, Rotary, Web dryers

WEB-FED ROTARY MACHINES, Printing, Books. See BOOKS, Printing, Machines, Web-fed rotary

WEB-FEED PHOTOGRAVURE. See PHOTOGRAVURE, Web-feed

WEB FEED PRINTING MACHINES. See PRINTING, Machines, Web-feed

WEB-OFFSET LITHOGRAPHY. See LITHOGRAPHY, Web-offset

WEB-OFFSET LITHOGRAPHY, Printing, Newspapers. See NEWSPAPERS, Printing, Lithography, Web-offset

WEB PLATES, Girders. See GIRDERS, Plates, Web

WEBBING, Rubber, Reinforced, Seats, Motor cars. See MOTOR CARS, Seats, Webbing, Rubber, Reinforced

WEDGES, Bars, Roofs, Mining, Coal. See COAL, Mining, Roofs, Bars, Wedges

WEDGES, Coal cutting. See COAL, Mining, Cutting, Wedges

#### WEEDKILLERS

Related Headings:  
HERBICIDES

WEEDKILLERS, Permanent way. See PERMANENT WAY, Weedkillers

WEEDS, Railways. See RAILWAYS, Weeds

WEFT STRAIGHTENERS, Finishing, Fabrics. See FABRICS, Finishing, Weft straighteners

WEFTS, Weaving. See WEAVING, Wefts

#### WEIGHBRIDGES

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WEIGHING, Powders. See POWDERS, Weighing

WEIGHING, Raw materials, Biscuits. See BISCUITS, Raw materials, Weighing

WEIGHING, Steel production. See STEEL, Production, Weighing

WEIGHING, Units

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KILOGRAMME, International

WEIGHING HEADS, Packaging, Machines. See PACKAGING, Machines, Weighing heads

#### WEIGHING MACHINES

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#### WEIGHING MACHINES

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LOAD CELLS  
LOADS, Measurement

#### WEIGHING MACHINES, Electrical

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WEIGHING MACHINES, Table tennis balls. See TABLE TENNIS BALLS, Weighing machines

WEIGHT BURETTES, Titrations. See TITRATIONS, Burettes, Weight

#### WEIGHT PUSHING, Manual

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WEIGHTING FUNCTIONS, Nuclear reactors. See NUCLEAR REACTORS, Weighting functions

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See

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#### WEIRS, Broad-crested, Circular, Discharge

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WELDED ALUMINIUM, River crossings, Pipelines. See PIPELINES, River crossings, Aluminium, Welded

WELDED ALUMINIUM ALLOYS, Shipbuilding materials. See ALUMINIUM, Alloys (Shipbuilding materials) Welded

WELDED AUSTENITIC STAINLESS STEEL. See STEEL, Stainless, Austenitic, Welded

WELDED BOX PLATE GIRDERS, Cranes, Ladles, Furnaces, Steel production. See STEEL, Production, Furnaces, Ladles, Cranes, Girders, Box plate, Welded

WELDED CRADLES, Slipways. See SLIPWAYS, Cradles, Welded

WELDED GIRDERS, Cranes. See CRANES, Girders, Welded

WELDED HIGH TENSILE STEEL—MANGANESE. See STEEL—MANGANESE, High tensile, Welded

WELDED MILD STEEL. See STEEL, Mild, Welded

WELDED RAILS, Open sections, Underground railways. See RAILWAYS, Underground, Open sections, Rails, Welded

WELDED RAILS, Permanent way. See PERMANENT WAY, Rails, Welded

WELDED SECTIONAL BEAMS, Machines, Warp knitting. See KNITTING, Warp, Machines, Beams, Sectional, Welded

WELDED SPHERICAL VESSELS. See VESSELS, Spherical, Welded

WELDED STAINLESS STEEL, Roofs. See ROOFS, Steel, Stainless, Welded

WELDED STEEL. See STEEL, Welded

WELDED STEEL, Plates. See PLATES, Steel, Welded  
 WELDED STEEL, Shafts. See SHAFTS, Steel, Welded  
 WELDED STEEL, Structures. See STRUCTURES, Steel, Welded  
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 WELDED WHEELS, Gas turbines, Aircraft. See AIRCRAFT, Gas turbines, Wheels, Welded

**WELDING**

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 Recent developments in welding techniques. *Mass Production*, 39 (Jul 63) p.41-3. il.  
 Techniques of modern welding. W. J. L. Oliphant. *Impulse* (2nd Quarter 62) p.14-18. il. refs.  
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**WELDING**

Related Headings:  
 ELECTRON BEAM WELDING  
 ULTRASONICS, Welding

**WELDING-SUBHEADINGS-Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*History*  
*Particular localities*  
*Italy*  
*Standards*  
*Research*  
*Problems*  
*Safety*  
*Fires*  
*Fatigue*  
*Distortion*  
*Equipment*  
*Technical activities*  
*Inspection*  
*Kinds of welding*  
*By heat source*  
*Electric*  
*Arc*  
*Stud*  
*Resistance*  
*Spot*  
*Electroslag*  
*Gas*  
*Oxy-acetylene*  
*Friction*  
*Pressure*  
*Cold*

WELDING, Aluminium, Chemical engineering plant. See CHEMICAL ENGINEERING, Plant, Aluminium, Welding  
 WELDING, Aluminium, Tanks, Ships, Tankers. See TANKERS, Ships, Tanks, Aluminium, Welding

WELDING, Aluminium-Magnesium-Zinc. See ALUMINIUM-MAGNESIUM-ZINC, Welding

**WELDING, Arc**

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 Present position in arc welding. N. Gross. *Brit. Welding J.*, 10 (Nov 63) p.552-62. il.  
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 WELDING, Arc, Aluminium. See ALUMINIUM, Welding, Arc

WELDING, Arc, Aluminium, Pipes. See PIPES, Aluminium, Welding, Arc

WELDING, Arc, Aluminium, Shipbuilding. See ALUMINIUM (Shipbuilding materials) Welding, Arc

WELDING, Arc, Aluminium alloys, Tubes, Aerials, Radar. See RADAR, Aerials, Tubes, Aluminium alloys, Welding, Arc

**WELDING, Arc, Arc research**

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**WELDING, Arc, Argon shielded, Cathodes, Tungsten, Thoriates**

Properties of the argon arc with thoriated tungsten cathode. K. Goldman. *Brit. Welding J.*, 10 (Oct 63) p.516-23. il. refs.

**WELDING, Arc, Argon shielded, Heat, Distribution**

Electric arcs in argon: heat distribution. K. Goldman. *Brit. Welding J.*, 10 (Jul 63) p.343-7. il. refs.

WELDING, Arc, Austenitic steel. See STEEL, Austenitic, Welding, Arc

WELDING, Arc, Bellows. See BELLOWES, Welding, Arc

**WELDING, Arc, Carbon dioxide shielded**

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Characteristics of the short circuiting CO<sub>2</sub> shielded arc. A. A. Smith. *Brit. Welding J.*, 10 (Nov 63) p.571-86. il. refs.

20 questions on CO<sub>2</sub> welding. E. J. Waitman. *Welding & Metal Fabrication*, 31 (Mar 63) p.100-4

**WELDING, Arc, Carbon dioxide shielded, Power supplies**

Power sources for carbon dioxide welding. J. Stejskal, J. Koci & J. Kratochvil. *Machinery Lloyd* (European ed.) 35 (4 May 63) p.28-30. il.

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WELDING, Arc, Diesel engine parts. See DIESEL ENGINES, Parts, Welding, Arc

WELDING, Arc, Earth moving equipment parts. See EARTH MOVING EQUIPMENT, Parts, Welding, Arc

**WELDING, Arc, Electrodes**

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**WELDING, Arc, Fine wire**

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**WELDING, Arc, Gas shielded**

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**WELDING, Arc, Gas shielded, Guns**

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Tube-plate joints made by an automatic process [Revere welding equipment] *Welding & Metal Fabrication*, 31 (Jan 63) p.41. il.

**WELDING, Arc, Gas shielded, Non-standard pressures**

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WELDING, Arc, Irradiated specimens, Crack arrest tests, Steel plates, Pressure vessels, Nuclear reactors. See NUCLEAR REACTORS, Pressure vessels, Plates, Steel, Crack arrest tests, Specimens, Irradiated, Welding, Arc

WELDING, Arc, Magnesium. See MAGNESIUM, Welding, Arc  
 WELDING, Arc, Metal sheets. See SHEETS, Metals, Welding, Arc

WELDING, Arc, Metal structures, Hydraulic engineering. See HYDRAULIC ENGINEERING, Structures, Metals, Welding, Arc

WELDING, Arc, Mild steel. See STEEL, Mild, Welding, Arc

**WELDING, Arc, Motor car parts.** See **MOTOR CARS, Parts, Welding, Arc**

**WELDING, Arc, Nickel-Steel, Cryogenics equipment.** See **CRYOGENICS, Equipment, Steel-Nickel, Welding, Arc**

**WELDING, Arc, Nickel alloy plates.** See **PLATES, Nickel alloy, Welding, Arc**

**WELDING, Arc, Nickel alloy sheets.** See **SHEETS, Nickel alloy, Welding, Arc**

**WELDING, Arc, Pipelines.** See **PIPELINES, Welding, Arc**

**WELDING, Arc, Pipes.** See **PIPES, Metal, Welding, Arc**

#### **WELDING, Arc, Power supplies**

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**WELDING, Arc, Rails, Permanent way.** See **PERMANENT WAY, Rails, Welding, Arc**

**WELDING, Arc, Shafts, Propellers, Ships.** See **SHIPS, Propellers, Shafts, Welding, Arc**

**WELDING, Arc, Shipbuilding.** See **SHIPBUILDING, Welding, Arc**

**WELDING, Arc, Stainless steel, Pipes.** See **PIPES, Steel, Stainless, Welding, Arc**

**WELDING, Arc, Steel.** See **STEEL, Welding, Arc**

**WELDING, Arc, Steel-Chromium-Molybdenum pipes, Refineries, Petroleum.** See **PETROLEUM, Refineries, Pipes, Steel-Chromium-Molybdenum, Welding, Arc**

#### **WELDING, Arc, Submerged**

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Submerged arc welding. G. Radnor. *Mass Production*, 39 (Oct 63) p.41-2

**WELDING, Arc, Titanium.** See **TITANIUM, Welding, Arc**

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**WINDINGS**, Double layer graded, Elimination, Harmonics, Polyphase a.c. machines. See A.C., Machines, Polyphase, Harmonics, Elimination, Double layer graded windings

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**WINDSOR**

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- WITHERITE, Mining, Durham County**  
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- WITWATERSRAND  
See GOLD, Deposits, Witwatersrand  
GOLD, Mining, Witwatersrand
- WOKING  
See HOUSING, Woking
- WOLLASTONITE, Deposits, Lappeenranta**  
Wollastonite deposit at Lappeenranta (Willmanstrand) S. E. Finland. P. S. Keeling. Trans. of Brit. Ceramic Soc., 62 (Oct 63) p.877-94. il. refs.
- WOLSELEY HORNET CARS. See MOTOR CARS, Types, Wolseley Hornet
- WOLVERHAMTON  
See WULFRUN COLLEGE OF FURTHER EDUCATION, Wolverhampton
- WOMEN, Technical education. See TECHNICAL EDUCATION, Women

## WOOD

Science—and its place in the timber industries (extracts)  
J. S. McBride. Woodworking Industry, 20 (Apr 63) p.200+

## WOOD

## Related Headings:

ABURA  
AFRICAN WALNUT  
BALSAWOOD  
BALTIC PINE  
BARK  
CANADIAN BIRCH  
CEDAR, Western red  
CORK  
CUBAN MAHOGANY  
GABOON, Timber  
GUAREA  
HARDBOARD  
HARDWOODS  
INDIAN SILVER GREYWOOD  
LIGNUM VITAE  
LOGS  
MAHOGANY  
MARACAIBO  
OBECHE  
POPLAR  
SAWDUST  
SCOTS PINE  
SNOWBERRY

## WOOD—SUBHEADINGS—Synopsis

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

Education  
Research

Problems  
Corrosion  
Rot  
Pests

Properties  
Chemistry  
Ignition  
Technical activities  
Drying  
Manufactures  
Machining  
Moulding  
Cutting  
Saws  
Planing  
Joining  
Fasteners  
Finishing  
Fillers  
Sanding  
Coating  
Paint  
Flameproofing  
Preservation  
Storage  
Mechanical handling  
Transport

Kinds of wood  
Curved  
Preservative treated  
Flameproofed  
Applications  
Building materials

- WOOD, Bathouses. See **BOATHOUSES**, Timber
- WOOD, Blocks, Floors. See **FLOORS**, Blocks, Wood
- WOOD, Blocks, Roadways, Bridges. See **BRIDGES**, Roadways, Blocks, Wood
- WOOD, Blocks, Surfaces, Roads. See **ROADS**, Surfaces, Blocks, Wood
- WOOD, Bodies, Agricultural vehicles. See **AGRICULTURAL VEHICLES**, Bodies, Wood
- WOOD, Bodies, Commercial vehicles. See **VEHICLES**, Commercial, Bodies, Wood
- WOOD, Bodies, Motor vehicles. See **MOTOR VEHICLES**, Bodies, Wood
- WOOD, Bonding, Plastic sheets. See **SHEETS**, Plastics, Bonding, Wood
- WOOD, Boxes, Harvesting, Potatoes. See **POTATOES**, Harvesting, Boxes, Wood
- WOOD, Building materials**  
New era of timber. Consulting Engr., 23 (Jun 63) p.661
- WOOD, Building materials, Houses. See **HOUSES**, Building materials, Wood
- WOOD, Buildings. See **BUILDINGS**, Wood
- WOOD, Bungalows. See **BUNGALOWS**, Wood
- WOOD, C.W. & HOLLIDAY, A.K.**  
Inorganic chemistry: reviewed. Chemistry & Industry (30 Nov 63) p.1892-3  
Organic chemistry: reviewed. Chemistry & Industry (30 Nov 63) p.1892-3  
Physical chemistry: reviewed. Chemistry & Industry (30 Nov 63) p.1892-3
- WOOD, Cabinet manufactures, Receivers, Radio. See **RADIO**, Receivers, Cabinets, Manufactures, Wood
- WOOD, Cabinet manufactures, Receivers, Television. See **TELEVISION**, Receivers, Cabinets, Manufactures, Wood
- WOOD, Cases, Packaging. See **PACKAGING**, Cases, Wood
- WOOD, Ceilings, Dining halls, University buildings. See **UNIVERSITY BUILDINGS**, Dining halls, Ceilings, Timber
- WOOD, Chemistry**  
Chemistry of wood. R. H. Farmer. Chemistry & Industry (16 Mar 63) p.438-40
- WOOD, Coastal works. See **COASTAL WORKS**, Wood
- WOOD, Coating, Dipping**  
Growing use of controlled dipping. R. Hook. Woodworking Industry, 20 (Mar 63) p.127-8. il.
- WOOD, Containers. See **CONTAINERS**, Wood
- WOOD, Cooling towers. See **COOLING**, Towers, Wood
- WOOD, Cooling towers, Textile manufactures. See **TEXTILES**, Manufactures, Cooling towers, Wood
- WOOD, Corrosion, Iron**  
Chemical deterioration of wood in the presence of iron. P. G. Morgan. Wood, 27 (Dec 62) p.492
- WOOD, Corrosion agents, Aluminium. See **ALUMINIUM**, Corrosion, Wood
- WOOD, Curved, Cutting, Jigs**  
Jigged cutting of curved components. E. Stephenson. Woodworking Industry, 20 (Feb 63) p.76-8. il.
- WOOD, Cutting, Tools, Tips, Tungsten carbide, Grinding, Diamond**  
Tools for woodworking. Industrial Diamond Rev., 23 (Jan 63) p.5-11. il.
- WOOD, Cutting, Ultrasonic**  
Attempts at vibrational cutting of wood. K. J. S. Walker & C. A. Scoles. Engineering, 195 (4 Jan 63) p.15. il. refs.
- WOOD, Display cabinets, Frozen food. See **FOOD**, Frozen, Display cabinets, Wood
- WOOD, Distillation  
Related Headings:  
**CHARCOAL**
- WOOD, Doors. See **DOORS**, Wood
- WOOD, Draining boards. See **DRAINING BOARDS**, Wood
- WOOD, Drums, Cables, Telephony. See **TELEPHONY**, Cables, Drums, Wood
- WOOD, Drums, Electric cables. See **CABLES**, Electric, Drums, Wood
- WOOD, Drying, Heating, R.F.**  
Drying of timber by R.F. heating. A. R. Dean. Wood, 28 (Feb 63) p.65-7. il. refs.
- WOOD, Drying, Kilns**  
Analysis of kiln drying, pt.4: time and economics necessitate kiln drying. W. H. Brown. Woodworking Industry, 20 (Feb 63) p.81+  
Analysis of kiln drying, pt.5: keep drying cycle in three distinct phases. W. H. Brown. Woodworking Industry, 20 (May 63) p.262-3. il.  
Analysis of kiln drying, pt.6: when is it safe to use higher-than-normal temperatures? W. H. Brown. Woodworking Industry, 20 (Jul 63) p.372-3  
Analysis of kiln drying, pt.7: end use must be considered. W. H. Brown. Woodworking Industry, 20 (Oct 63) p.535+  
Analysis of kiln drying, pt.8: accelerated drying depends on end use. W. H. Brown. Woodworking Industry, 20 (Nov 63) p.604+. il.  
Controlled kilning for the trade. D. A. Jolley. Woodworking Industry, 20 (Jan 63) p.30-1. il.
- WOOD, Education**  
Power in their hands. H. V. Gowers. Technical Education, 5 (Jun 63) p.268-9. il.  
Timber education after 25 years. E. H. Brooke Boulton. Wood, 28 (Feb 63) p.59-60
- WOOD, Fasteners, Polymer coated**  
Chemical coatings for wood fastenings. Woodworking Industry, 20 (Jun 63) p.316. il.
- WOOD, Fillers**  
Using pigmented finishes. J. W. Collier. Woodworking Industry, 20 (Sep 63) p.497
- WOOD, Finishing**  
Problems of pigmented finishes. J. W. Collier. Woodworking Industry, 20 (Oct 63) p.539  
Wood finishing: improving the natural appearance. Woodworking Industry, 20 (Aug 63) p.421
- WOOD, Finishing, Polyesters**  
Development of polyester for wood finishing. A. Rieck. Woodworking Industry, 20 (Mar 63) p.137+  
Methods of applying polyester. J. W. Collier. Woodworking Industry, 20 (Jun 63) p.323  
Modern sanding techniques, pt.4: new finishing materials bring new methods. J. H. Miller. Woodworking Industry, 20 (Nov 63) p.606-7. il.  
Polyester—the summing up (contd.) J. W. Collier. Woodworking Industry, 20 (Jul 63) p.377  
Pros and cons of polyester. J. W. Collier. Woodworking Industry, 20 (Apr 63) p.211  
Unsaturated polyester lacquers. J. W. Collier. Woodworking Industry, 20 (May 63) p.265
- WOOD, Finishing, Polyesters, Polishing**  
Buffing techniques for polyester lacquers. J. P. Dewar. Woodworking Industry, 20 (Mar 63) p.141+. il.
- WOOD, Finishing, Polyurethane**  
Polyurethane lacquers, pt.3: tips on their proper use. J. W. Collier. Woodworking Industry, 20 (Feb 63) p.85  
Polyurethane lacquers, pt.4: Suitable types available for most uses. J. W. Collier. Woodworking Industry, 20 (Mar 63) p.129+. il.
- WOOD, Finishing, Spraying, Electrostatic**  
Finishing wood by electrostatic application. L. C. Neal. Woodworking Industry, 20 (Mar 63) p.133+. il. ref.
- WOOD, Finishing, Transparent**  
Exterior clear finishes for timber. V. R. Gray. Wood, 28 (Mar 63) p.103-5. il.
- WOOD, Fittings, Passenger ships. See **SHIPS**, Passenger, Fittings, Wood
- WOOD, Fittings, Retail shops. See **SHOPS**, Retail, Fittings, Wood



**WOOD, Flame proofed, Strength, Tests**

Strength properties of wood treated with fire retardants.  
A. P. Jessome. Civil Engng. & Public Works Rev., 58  
(Apr 63) p.513+

**WOOD, Flame proofing**

Fire retardant treatments. J. H. Dyer. Wood, 28 (Feb 63)  
p.71. il.

Fire retardant/water repellent treatment of timber. R. W.  
Watson. Wood, 28 (Jun 63) p.259-60. il. refs.

WOOD, Flats. See FLATS, Wood

WOOD, Floors. See FLOORS, Timber

WOOD, Floors, Underfloor heating, Buildings. See BUILDINGS,  
Heating, Underfloor, Timber floors

WOOD, Flush doors. See DOORS, Flush, Wood

WOOD, Folded plates, Roofs, Churches. See CHURCHES,  
Roofs, Plates, Folded, Timber

WOOD, Formwork, Concrete construction, Buildings. See  
BUILDINGS, Concrete, Construction, Formwork, Wood

WOOD, Frames, Houses. See HOUSES, Frames, Wood

WOOD, Frames, Libraries. See LIBRARIES, Frames, Wood

WOOD, Frames, Windows, Warehouses. See WAREHOUSES,  
Windows, Frames, Wood

WOOD, Fungi

Related Headings:  
DRY ROT

WOOD, Furniture. See FURNITURE, Wood

WOOD, Gridworks, Roofs. See ROOFS, Gridworks, Timber

WOOD, Houses. See HOUSES, Wood

WOOD, Hulls, Motor boats. See BOATS, Motor, Hulls, Wood

**WOOD, Ignition, Pilot flame**

On the pilot ignition of wood by radiation. D. L. Simms.  
Combustion & Flame, 7 (Sep 63) p.253-61. il. refs.

**WOOD, Ignition, Spontaneous**

Mathematical analysis of self-ignition. W. Squire. Combustion  
& Flame, 7 (Mar 63) p.1-8. il. refs.

WOOD, Industrial buildings. See INDUSTRIAL BUILDINGS,  
Wood

WOOD, Interior decoration, Banks. See BANKS, Interior  
decoration, Timber

WOOD, Interior decoration, Embassies. See EMBASSIES,  
Interior decoration, Wood

WOOD, Interior decoration, Libraries. See LIBRARIES,  
Interior decoration, Wood

WOOD, Interior decoration, Studios, Recording, Sound  
films. See SOUND FILMS, Recording, Studios, Interior  
decoration, Timber

**WOOD, Jointing, Dowels**

Wood dowels "Checker" Foundry Trade J., 114 (14 Feb  
63) p.199-200. il.

**WOOD, Jointing, Finger**

Strength of finger joints. J. G. Sunley & P. S. Dawe. Wood,  
28 (Sep 63) p.387-9. il.

**WOOD, Jointing, Presses, Pneumatic**

Cheap press conversion. J. Pound. Wood, 28 (Aug 63)  
p.343-4. il.

Pneumatics aid timber production. Fluid Power International,  
28 (Nov 63) p.401-3. il.

**WOOD, Jointing, Pressure**

Applying pressure to glue lines. J. Pound. Wood, 28  
(May 63) p.205-7. il.

**WOOD, Jointing, Scarf, Adhesives, Curing**

Curing glues in scarf joints. J. Pound. Wood, 28 (Feb 63)  
p.68-70. il.

**WOOD, K.**

Kenneth Wood and the development of kitchen automation.  
Electrical Manufacture, 8 (Nov 63) p.15-16. il.

WOOD, Laminated. See LAMINATES, Wood

WOOD, Laminated, Beams, Roofs, Factories. See FACTORIES,  
Roofs, Beams, Wood, Laminated

WOOD, Laminated, Beams, Roofs, Ice rinks. See ICE RINKS,  
Roofs, Beams, Wood, Laminated

WOOD, Laminated, Buildings. See BUILDINGS, Wood,  
Laminated

WOOD, Laminated, Formwork, Concrete construction, Build-  
ings. See BUILDINGS, Concrete, Construction, Formwork,  
Wood, Laminated

WOOD, Laminated, Portal frames, Dormitories, Colleges. See  
COLLEGES, Dormitories, Portal frames, Wood, Laminated

WOOD, Laminated, Portal frames, Restaurants. See  
RESTAURANTS, Frames, Portal, Wood, Laminates

WOOD, Laminated, Scaffold boards. See SCAFFOLD  
BOARDS, Wood, Laminated

WOOD, Laminated, Structures. See STRUCTURES, Timber,  
Laminated

WOOD, Libraries, University buildings. See UNIVERSITY  
BUILDINGS, Libraries, Wood

**WOOD, Machining, Machine tools**

100 years of making woodworking machines: Thomas  
White's started with textile machinery. Woodworking  
Industry, 20 (Aug 63) p.413-14. il.

**WOOD, Machining, Machine tools, France**

French manufacturers break with artisan influence. P.  
Pouzeau. Woodworking Industry, 20 (Dec 63) p.668-70.  
il.

**WOOD, Machining, Machine tools, Germany**

German manufacturers aim at specialised machinery. F. Rüb.  
Woodworking Industry, 20 (Dec 63) p.665-7. il.

**WOOD, Manufactures**

Related Headings:

CHIPBOARD  
CORK BOARD  
FIBRE BOARD  
HARDBOARD  
INSULATING BOARD  
PARTICLE BOARDS  
PLYWOOD  
SAWMILLS  
TENONING  
VENEERS

**WOOD, Manufactures, Adhesives, Curing, Heating, Low voltage**

Present day low voltage heating, pt.1. J. Pound. Wood, 28  
(Oct 63) p.431-3. il.

Present day low voltage heating, pt.2. J. Pound. Wood, 28  
(Nov 63) p.468-71. il.

**WOOD, Manufactures, Adhesives, Curing, Heating, R.F.**

Is the R.F. heating jig efficient? J. Pound. Wood, 27 (Dec  
62) p.493-5. il.

**WOOD, Manufactures, Adhesives (Curing, Heating, R.F.)**

Glues for R.F. heating. J. Pound. Wood, 28 (Sep 63)  
p.392-3. il.

**WOOD, Manufactures, Adhesives, Synthetic resins**

Synthetic adhesives for the woodworking industries. P. W.  
Sherwood. Wood, 28 (Oct 63) p.428-30

**WOOD, Manufactures, Heating, R.F., Generators**

Servicing R.F. generators. J. Pound. Wood, 28 (Jan 63)  
p.25-6. il.

**WOOD, Manufactures, Machines**

Century in woodworking machinery. M. A. White. Wood, 28  
(May 63) p.208-10. il.

**WOOD, Manufactures, Pipes, Steam, Insulation**

Steam pipe covering for woodworking plant. P. W. Sherwood.  
Wood, 28 (Nov 63) p.462-3

**WOOD, Manufactures, Plant, Layout**

Properly planned layouts can reduce handling costs and  
increase safety. R. Evans. Woodworking Industry, 20  
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**WOOD, Manufactures, Production control**

Short cut to work evaluation. J. Kingston. Woodworking  
Industry, 20 (Jun 63) p.317+. ref.

**WOOD, Mechanical handling**

Linked machines handle 250 standards each week. D. A.  
Jolley. Woodworking Industry, 20 (Jun 63) p.306-9. il.

**WOOD, Mechanical handling, Ports**

Handling of timber imports: examination of present and future practice. D. Patterson. Dock & Harbour Authority, 44 (Jul 63) p.76-9

Packaged timber experiments in the United Kingdom. Dock & Harbour Authority, 43 (Apr 63) p.394-5. il.

WOOD, Mining equipment. See MINING, Equipment, Timber

WOOD, Models, Hydraulic engineering. See HYDRAULIC ENGINEERING, Models, Wood

WOOD, Modular exhibition buildings. See EXHIBITION BUILDINGS, Modular, Wood

**WOOD, Moulding, Stop, Safety**

Stop-moulding on a spindle can be safe. E. Stephenson. Woodworking Industry, 20 (Oct 63) p.532-4. il.

**WOOD, Paint**

Using pigmented finishes. J. W. Collier. Woodworking Industry, 20 (Sep 63) p.497

WOOD, Panels, Walls, Houses. See HOUSES, Walls, Panels, Wood

**WOOD, Pests**

Causes and remedies of timber decay. Timber Decay Association. S. A. Richardson. Consulting Engr., 22 (Dec 62) p.608

Causes of timber decay. Consulting Engr., 22 (Dec 62) p.609-14. il.

**WOOD, Pests, Boring, Detection, X-rays**

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**WOOD, Pests, Marine borers**

Malayan marine borer tests on timber. H. J. Burgess. Instn. of Civil Engrs. Proc., 25 (Jun 63) p.195-200. refs.

Marine borer research at the British Columbia Research Council. C. C. Walden. Dock & Harbour Authority, 43 (Apr 63) p.383-6. il.

Resistance of timber to marine borers (extracts) A. C. Oliver. Consulting Engr., 23 (Jun 63) p.680-1

**WOOD, Pests, Marine borers, Tests**

Marine borer tests in Poole Harbour: preliminary appraisal of experiments. R. P. Woods. Dock & Harbour Authority, 44 (Nov 63) p.231-3

WOOD, Piles. See PILES, Wood

**WOOD, Planing, Machines**

Machines fed with timber at a rate of one piece every six seconds [B. & A.] Woodworking Industry, 20 (Mar 63) p.142-3. il.

**WOOD, Planing, Rotary, Surface finish**

Investigating finish in rotary planing. R. Goodchild. Engineering, 195 (25 Jan 63) p.172-3. il. ref.

WOOD, Posts, Fences, Roads. See ROADS, Fences, Posts, Timber

WOOD, Prefabricated banks. See BANKS, Prefabricated, Wood

WOOD, Prefabricated churches. See CHURCHES, Prefabricated, Wood

WOOD, Prefabricated theatres. See THEATRES, Prefabricated, Wood

**WOOD, Preservation**

Fundamental problems in wood protection (abstracts) J. F. Levy. Wood, 28 (Jun 63) p.255-6. il.

International co-operation in wood preservation. W. E. Brute-Wood, 28 (Jun 63) p.261

Preservation of wood-work. J. W. Munro. Chemistry & Industry (20 Apr 63) p.645-7

**WOOD, Preservation, Vacuum treatment**

Vacuum pressure treatment. D. S. Belford. Wood, 28 (Mar 63) p.106-8. il.

**WOOD, Preservative treated, Glueing**

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**WOOD, Preservative treated, Glueing—cont.**

Glueing techniques with treated timber (contd.) W. F. Wetherall. Woodworking Industry, 20 (Oct 63) p.536+

WOOD, Pulp. See PULP

**WOOD, Research**

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**WOOD, Research, Laboratories**

Swedish Wood Research Centre, Stockholm. B. Lindberg. Chemistry & Industry (9 Nov 63) p.1778-84. il.

WOOD, Resources, Pulp production. See PULP, Production, Timber resources

WOOD, Roofs. See ROOFS, Timber

WOOD, Roofs, Churches. See CHURCHES, Roofs, Timber

WOOD, Roofs, Church halls. See HALLS, Church, Roofs, Timber

WOOD, Roofs, Halls, Technical colleges. See TECHNICAL COLLEGES, Halls, Roofs, Timber

**WOOD, Rot**

Dry rot & wet rot in Great Britain. N. Hickin. Wood, 28 (Jan 63) p.22-4. il.

**WOOD, Sanding, Machines**

Modern machines give automatic craftsmanship, pt.3: developments in sanding. J. H. Miller. Woodworking Industry, 20 (Sep 63) p.486-7. il.

**WOOD, Saws**

Sawing—from craft to science [Vollmer] E. Cousins. Woodworking Industry, 20 (May 63) p.255-6. il.

Trends in sawing machinery. E. Stephenson. Woodworking Industry, 20 (May 63) p.253-4. il.

**WOOD, Saws, Band**

Saw maintenance, pt.2: how to get longer life from narrow bandsaws. H. J. Endersby. Woodworking Industry, 20 (Aug 63) p.415-16

**WOOD, Saws, Chain**

Powered saws. Agricultural Machinery J., 17 (Sep 63) p.39+. il.

**WOOD, Saws, Chain, Electric motor**

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Powers of the motor chain-saw. Municipal J., 71 (11 Jan 63) p.99-100. il.

**WOOD, Saws, Chain, Maintenance**

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Chain saw care, pt.2. R. M. Foulds. Agricultural Machinery J., 17 (Sep 63) p.50

**WOOD, Saws, Circular, Maintenance**

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WOOD, Shell entrances, Railway stations. See RAILWAY, Stations, Entrances, Shell, Timber

WOOD, Shell roofs. See ROOFS, Shell, Timber

WOOD, Shell roofs, Railway stations. See RAILWAYS, Stations, Roofs, Shell, Timber

WOOD, Shell roofs, Training colleges, Teachers. See TEACHERS, Training colleges, Roofs, Shell, Timber

WOOD, Ski lodges. See SKI LODGES, Timber

**WOOD, Storage, Mechanical handling**

Fast piling & despatch with timber sorting machine. D. Lamb-Shine. Storage Handling Distribution, 7 (May 63) p.34-7. il.

**WOOD, Storage, Sheds**

Structural problems solved on poor load bearing soil. Timber storage buildings at Long Whaddon. Wood, 28 (Jan 63) p.10-12. il.

WOOD, Structures. See STRUCTURES, Timber

WOOD, Swimming bath components. See SWIMMING BATHS, Components, Timber

WOOD, Templates, Coreboxes, Moulds. See MOULDS, Coreboxes, Templates, Wood

WOOD, Templates, Patterns, Casting. See CASTING, Patterns, Templates, Wood

WOOD, Towers, Transmitters, Radio. See RADIO, Transmitters, Towers, Wood

**WOOD, Transport, Package consignments, Motor vehicles**  
Packaged timber handling. Mechanical Handling, 50 (Apr 63) p.212-13. il.

WOOD, Trays, Filing. See FILING, Trays, Wood

WOOD, Vats, Chemical engineering plant. See CHEMICAL ENGINEERING, Plant, Vats, Wood

WOOD, Waste, Firing, Water tube boilers. See BOILERS, Water tube, Wood waste fired

WOOD CARRYING SHIPS. See SHIPS, Timber carrying

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**WOOD-UREA FORMALDEHYDE, Compositions, Moulding**  
Shaped components produced by moulding technique [Werzalit] D. Alan. Woodworking Industry, 20 (Jan 63) p.20-1. il.

WOODBIDGE  
See

HOUSING, Old people, Woodbridge

WOODWORKING MACHINES, Boat building. See BOATS, Building, Woodworking machines

WOODWORM, Pests, Houses. See HOUSES, Pests, Woodworm

## WOOL

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Wool: molecular basis of unique fibre qualities. R. W. Moncrieff. Textile Manufacturer, 89 (Apr 63) p.140-1. refs.

## WOOL

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WOOL, Bales. See BALES, Wool

## WOOL, Carding

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## WOOL, Carding, Machines, Teeth, Bending

Effect of the angle of bend of swift and doffer wires. P. P. Townend & J. C. Dobson. Textile Manufacturer, 89 (Oct 63) p.420+. il. refs.

## WOOL, Carding, Vacuum stripping

Vacuum card stripping plant. Wool Record, 104 (9 Aug 63) p.15+. il.

WOOL, Carpets. See CARPETS, Woollen

WOOL, Clothing. See CLOTHING, Woollen

## WOOL, Combing

Influence of wool regain during Noble combing. D. S. Taylor & G. W. Walls. J. of Textile Inst., Trans., 54 (May 63) p.183-91. refs.

## WOOL, Combing, Control systems

Feed control in Noble combing. D. S. Taylor. Textile Recorder, 80 (Mar 63) p.48-9. il.

## WOOL, Combing, Fibre selection, Geometry

Preliminary investigation of the redilinear combing of wool. R. E. Belin & G. W. Walls. J. of Textile Inst., Trans., 54 (Apr 63) p.171-9. il. refs.

## WOOL, Dyeing

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Recent developments in dyeing wool and wool blends (summary) W. Beal. Textile Manufacturer, 89 (May 63) p.204-6

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## WOOL, Dyeing, pH control, Urea-Bisulphite solubility testing

Methods for conserving the properties of wool during dyeing. W. C. F. Swindell. J. of Soc. of Dyers & Colourists, 79 (Oct 63) p.457-61. refs.

## WOOL, Dyes, Acid, Diffusion, Effect of surface active agents, Nonylphenol-Ethylene oxide

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B. R. Craven & A. Dwyer. J. of Soc. of Dyers & Colourists, 79 (Nov 63) p.515-19. il. refs.

## WOOL, Dyes, Reactive

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## WOOL, Dyes, Thiosulphate

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WOOL, Fabrics. See FABRICS, Woollen

WOOL, Fabrics, Dresses. See DRESSES, Fabrics, Woollen

WOOL, Fabrics, Dressing-gowns. See DRESSING-GOWNS, Fabrics, Woollen

WOOL, Fabrics, Knitwear. See KNITWEAR, Fabrics, Wool

WOOL, Fabrics, Overcoatings. See OVERCOATINGS, Fabrics, Woollen

WOOL, Fabrics, Suitings. See SUITINGS, Fabrics, Woollen

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WORK SAMPLING

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WORK STUDY, Knitwear manufactures. See KNITWEAR, Manufactures, Work study

WORK STUDY, Maintenance, Engineering, Railways. See RAILWAYS, Engineering, Maintenance, Work study

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X-RAYS, Diffraction, Analysis, Aluminosilicates. See ALUMINOSILICATES, Analysis, X-ray diffraction

X-RAYS, Diffraction, Analysis, Barium borate glass. See GLASS, Barium borate, X-ray diffraction analysis

- X-RAYS, Diffraction, Analysis, Residual stresses, Mild steel.**  
See STEEL, Mild, Residual stresses, Analysis, X-ray diffraction
- X-RAYS, Diffraction, Annealing, Polythene crystals.** See POLYTHENE, Crystals, Annealing, X-ray diffraction studies
- X-RAYS, Diffraction, Cameras**  
Conversion of the Philips powder camera for single crystal use. F. L. Carter & A. S. Venturino. *J. of Scientific Instruments*, 40 (Jun 63) p.328-9. il. refs.
- X-ray camera with oscillating crystal and film for studies of single crystals. S. Szarras, L. Bonkowski & J. Auleytner. *J. of Scientific Instruments*, 40 (Jan 63) p.20-2. il. refs.
- X-RAYS, Diffraction, Cameras, Microfurnaces**  
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- X-Rays, Diffraction, Crystal lattice parameters, Determination, Centroid method**  
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- X-RAYS, Diffraction, Direct beam topographs**  
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- X-RAYS, Diffraction, Dislocation studies, Annealed silver.**  
See SILVER, Annealed, Dislocations, Studies, X-ray diffraction
- X-RAYS, Diffraction, Elastic modulus measurement, Crystals, Fortisan H.** See FORTISAN H, Crystals, Elastic modulus, Measurement, X-ray diffraction
- X-RAYS, Diffraction, Granular solid fertilisers.** See FERTILISERS, Solid, Granular, X-ray diffraction
- X-RAYS, Diffraction, History**  
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- X-RAYS, Diffraction, Measurement, Goniometers, Specimen holders**  
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- X-RAYS, Diffraction, Powder photographs**  
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- X-RAYS, Diffraction, Pyrolytic graphite.** See GRAPHITE, Pyrolytic, X-ray diffraction
- X-RAYS, Diffraction, Scattering patterns, Homometric solutions**  
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- X-RAYS, Diffraction, Stereochemistry, P.V.C.** See P.V.C., Stereochemistry, X-ray diffraction
- X-RAYS, Diffraction, Texture studies, Crystals.** See CRYSTALS, Texture, Studies, X-ray diffraction
- X-RAYS, Diffraction studies, Swelling, Clay minerals.** See CLAY MINERALS, Swelling, Study, X-ray diffraction
- X-RAYS, Diffractometers**  
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- X-RAYS, Diffractometers, Current stabilisers**  
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- X-RAYS, Diffractometers, Focusing attachments**  
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- X-RAYS, Dislocation studies, Crystals, Metals.** See METALS, Crystals, Dislocations, X-ray studies
- X-RAYS, Fluorescence, Analysis, Steel, Cutters, Machine tools.** See MACHINE TOOLS, Cutters, Steel, Analysis, X-ray fluorescence
- X-RAYS, Fluorescence, Co-ordination number determination, Aluminium ions.** See ALUMINIUM, Ions, Co-ordination numbers, Determination, X-ray fluorescence
- X-RAYS, Fluorescence, Inspection, Fuses, Ammunition, Military aircraft.** See AIRCRAFT, Military, Ammunition, Fuses, Inspection, X-ray fluorescence
- X-RAYS, Fluorescence, Spectrographs**  
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- X-RAYS, Fluorescence, Spectrometers, Current stabilisers**  
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- X-RAYS, Fluorescence, Spectroscopy, Steel alloys.** See STEEL, Alloys, Spectroscopy, X-ray fluorescence

- X-RAYS, Fluorescence, Spectroscopy, Strontium determination,** Drinking water. See **WATER, Drinking, Determination of strontium, Spectroscopy, X-ray fluorescence**
- X-RAYS, Gauges, Thickness, Hot rolling, Steel strips.** See **STRIPS, Steel, Rolling, Hot, Thickness, Gauges, X-rays**
- X-RAYS, Images, Television**  
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- X-RAYS, Medical radiology.** See **MEDICAL RADIOLOGY, X-rays**
- X-RAYS, Microanalysis**  
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ELECTRON PROBE MICROANALYSIS
- X-RAYS, Microanalysis, Light elements.** See **LIGHT ELEMENTS, X-ray microanalysis**
- X-RAYS, Microscopy, Equipment**  
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- X-RAYS, Microscopy, Polymers.** See **POLYMERS, Microscopy, X-ray**
- X-RAYS, Pigment distribution determination, Storage, Paint.** See **PAINT, Storage, Pigment distribution, Determination, X-rays**
- X-RAYS, Pitting studies, Corrosion, Boilers, Power stations.** See **POWER STATIONS, Boilers, Corrosion, Pitting, X-ray studies**
- X-RAYS, Testing, Soil mechanics.** See **SOIL MECHANICS, Testing, X-ray**
- X-RAYS, Tubes, Flash, Coaxial, Discharge, Studies**  
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- X-RAYS, Tubes, Spectral contamination**  
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- X-Y PLOTTERS, Output units, Computers.** See **COMPUTERS, Output units, X-Y plotters**
- XANTHATES, Collectors, Flotability, Pyrites.** See **PYRITES, Flotability, Collectors, Xanthates**
- XANTHATES, Collectors, Flotation, Galena.** See **GALENA, Flotation, Collectors, Xanthates**
- XANTHATES, Collectors, Flotation, Ores, Copper.** See **COPPER, Ores, Flotation, Collectors, Xanthates**
- XANTHATES, Collectors, Flotation, Ores, Lead.** See **LEAD, Ores, Flotation, Collectors, Xanthates**
- XANTHATES, Collectors, Flotation, Sulphides, Ores.** See **ORES, Sulphides, Flotation, Collectors, Xanthates**
- XANTHIDES, Cereal, Papermaking.** See **PAPERMAKING, Cereal xanthides**
- XENON, Area determination, Vacuum deposited metal films.** See **FILMS, Metal, Vacuum deposited, Area determination, Xenon**
- XENON, Lamps.** See **LAMPS, Xenon**
- XENON, Lamps, Lighthouses.** See **LIGHTHOUSES, Lamps, Xenon**
- XEROGRAPHY, Output units, Computers.** See **COMPUTERS, Output units, Xerography**
- XYLENES, Production**  
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- Xylene fractionation. *Fluid Handling* (Jan 63) p.7-8. il.
- Y-JUNCTION CIRCULATORS, Waveguides.** See **WAVE-GUIDES, Circulators, Y-junction**
- YACHTS**  
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- Craftsmen's coast. *Motor Boat*, 98 (28 Jun 63) p.28-9. il.
- Sailing yachts. *Motor Boat*, 98 (Mid Jan 63) p.28-30. il.
- Saro Scimitar—resin-glass keel boat. *Motor Boat*, 98 (Mid Feb 63) p.46-7. il.
- YACHTS, Basins**  
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- Marina for Langstone harbour. "Ocean Tramp". *Ship & Boat Builder*, 16 (Jan 63) p.72. il.
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- Solent marina—King's Quay proposal. *Motor Boat*, 98 (Mid Jan 63) p.50-1. il.
- YACHTS, Basins, Piles, Concrete**  
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Dutch yachtbuilders set high standards. *Ship & Boat Builder*, 16 (Jun 63) p.37-41. il.
- YACHTS, Design, Instruments**  
Instrumentation helps yacht design. A. Q. Chapleo. *Design & Components in Engng.* (Feb 63) p.8-10. il.
- YACHTS, Masts, Aluminium, Extruded**  
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- YACHTS, Model tests**  
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- Fast, easily handled cruising yawl "Firebird". *Shipbuilding & Shipping Record*, 102 (15 Aug 63) p.218-19. il.
- Fast motor yacht. *Motor Boat*, 98 (Mid Jan 63) p.40. il.
- Felicity—pocket cruiser. *Motor Boat*, 98 (Mid Feb 63) p.40. il.
- 52-ft. luxury motor yacht. *Motor Boat*, 99 (12 Jul 63) p.48. il.
- "Gladys Rose III". *Ship & Boat Builder*, 16 (Jan 63) p.81. il.
- Lloyd's Trophy winner. *Motor Boat*, 99 (29 Nov 63) p.29. il.
- M.Y. "Bobbina", a luxury concept in yachting. *Motor Boat*, 98 (31 May 63) p.36-7. il.
- "Mingulay" power sailer. *Motor Boat*, 98 (19 Apr 63) p.49. il.
- "Pankina". *Motor Boat*, 98 (8 Mar 63) p.64-5. il.
- Sailing man's power craft. *Motor Boat* (Mid Dec 62) p.32. il.
- Sea-going motor yacht. *Motor Boat*, 99 (9 Aug 63) p.22-3. il.
- "Sealion 42"—a classical motor cruiser. *Shipbuilding & Shipping Record*, 101 (31 Jan 63) p.144-5. il.
- "Southern Cross". *Motor Boat* (Mid Dec 62) p.38-9. il.
- 28-foot cruiser—designed for sheltered waters. *Motor Boat*, 98 (14 Jun 63) p.65. il.
- Twin-screw motor yacht for sheltered and open waters. *Motor Boat*, 98 (14 Jun 63) p.76-7. il.
- YACHTS, Motor, Classification**  
+100A1 Yacht—Lloyd's classification. *Motor Boat*, 98 (31 May 63) p.46-7. il.
- YACHTS, Motor, Conversion from fishing vessels**  
Rags to riches. *Motor Boat*, 99 (1 Nov 63) p.26-7. il.
- YACHTS, Motor, Diesel engines**  
Robust four-berth cruiser. *Motor Boat* (12 Jul 63) p.47. il.



**YACHTS, Motor, Engines**

Engines aft. Motor Boat, 98 (28 Jun 63) p.62-3. il.

**YACHTS, Motor, Gas turbines**

Conversions to gas turbine. Motor Boat, 98 (8 Mar 63) p.129. il.

**YACHTS, Navigation, Charts**

Admiralty yachting charts. R. F. Milner. Motor Boat, 98 (Mid Jan 63) p.54. il.

**YACHTS, Polyester-Glass fibre**

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Resin-glass winner 'Cohoe IV' in the Southsea-Harwich race. Motor Boat, 98 (14 Jun 63) p.70-1. il.

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Winner from Anglesey. Ship & Boat Builder, 16 (May 63) p.33. il.

**YACHTS, Surveying**

Yacht surveying. Motor Boat, 98 (19 Apr 63) p.67-8. il.

**YAMAHA MOTOR CYCLES.** See **MOTORCYCLES, Types,** Yamaha

**YARD, Standards**

Yard unit of length. P. H. Bigg & P. Huderton. Nature, 200 (23 Nov 63) p.730-2. il. refs.

**YARDS (Dairies) Surfaces, Slabs, Concrete**

Midland dairy overcomes delivery yard surface problem [Stelcon rafts] Dairy Industries, 28 (Jan 63) p.47. il.

**YARN, Sewing, Making-up, Fabrics.** See **FABRICS, Making-up, Sewing, Thread**

**YARNS**

Related Headings:

HANKS  
ROVINGS  
SLIVERS  
SLUBBINGS  
THREAD  
TOPS

**YARNS-SUBHEADINGS-Synopsis**

*This synopsis shows, in italic, related subheadings which are separated in the alphabetical sequence following.*

*Faults*

*Slubs*

Properties

*Tensile tests*

*Mass-length relationships*

*Equipment*

*Packages*

Technical activities

*Drawing*

*Winding*

*Spinning*

*Twisting*

*Crimping*

*Sizing*

*Dyeing*

*Warping*

*Counting*

Kinds of yarns

*Fancy*

*Filament*

By property

*Elastic*

*Bulked*

By material

*Cotton*

*Linen*

*Jute*

*Woollen*

*Worsted*

**YARNS-SUBHEADINGS-Synopsis-cont.**

*Man-made fibres*

*Nylon*

*Courtelle*

*Orlon*

*Cellulose acetate*

*Rayon*

*Polyethylene terephthalate*

*Terylene*

*Polypropylene*

*Polyurethane*

**YARNS, Bulkcd**

Physical properties of bulkcd yarns, pt.1. M. S. Burnip. Textile Recorder, 80 (Apr 63) p.57-8. refs.

Physical properties of bulkcd yarn, pt.2. M. S. Burnip. Textile Recorder, 81 (May 63) p.64-6. refs.

Physical properties of bulkcd yarns, pt.3. M. S. Burnip. Textile Recorder, 81 (Jun 63) p.63+. il. refs.

Physical properties of bulkcd yarns, pt.4. M. S. Burnip. Textile Recorder, 81 (Jul 63) p.56-7. il. ref.

**YARNS, Carpets.** See **CARPETS, Yarns**

**YARNS, Cellulose acetate**

High fashion fabrics: from knitted acetate yarns and blends. Hosiery Trade J., 70 (Oct 63) p.151-5. il.

**YARNS, Cotton, Bleached, Degradation, Ultraviolet radiation**

Action of far-ultraviolet radiation on cotton cellulose. G. S. Egerton, E. Attle, F. Guirguis & M. A. Rathor. J. of Soc. of Dyers & Colourists, 79 (Feb 63) p.49-55. refs.

**YARNS, Cotton, Drawing, Frames**

Future cotton drawframes: design and operating economics. W. Slater. Textile Manufacturer, 89 (Dec 63) p.502-5. il.

High efficiency draw frame [Zinser Textilmaschinen GmbH] Textile Recorder, 81 (May 63) p.73+. il.

**YARNS, Cotton, Elastic**

Stretch cottons. W. A. Reeves. Textile Recorder, 81 (May 63) p.56+. il. refs.

**YARNS, Cotton, Lubrication**

Lubrication of spun yarns. C. Rubenstein. J. of Textile Inst., Trans., 54 (Jun 63) p.234-53. refs.

**YARNS, Cotton, Manufactures**

Priorities and targets. W. S. Sondhelm. Textile Manufacturer, 89 (Apr 63) p.144+. il.

Road to automated spinning [CAS system] H. Catling. Skinner's Record, 37 (Feb 63) p.119+. il.

**YARNS, Cotton, Mechanical properties, Correlation with fibre properties**

Cotton fibre tensile stiffness and toughness effects on yarn properties. L. A. Fiori & J. N. Grant. J. of Textile Inst., Proc., 54 (Jul 63) p.79-91. refs.

**YARNS, Cotton, Packages**

Improved cotton-type speed frame. Textile Recorder, 80 (Feb 63) p.68. il.

**YARNS, Cotton, Processing, Nylon processing machines.** See **YARNS, Nylon, Processing, Cotton processing machines**

**YARNS, Cotton, Spinning**

Developments in spinning. Textile Weekly, 63 (1 Mar 63) p.378+

Modern methods of cotton spinning. Textile Weekly, 63 (22 Feb 63) p.337+

Modern techniques in spinning cotton and synthetic fibres. I. Jenkins. Textile Manufacturer, 89 (Aug 63) p.320-2

Vertical thinking in the textile industry. G. H. Jolly. Textile Weekly, 63 (25 Oct 63) p.806+

**YARNS, Cotton, Spinning, Drafting**

Drafting—cotton systems using rollers or rollers and aprons. W. S. Sondhelm. Textile Inst. & Industry, 1 (Jun 63) p.9-12

**YARNS, Cotton, Spinning, Machines**

Automation in cotton spinning. Textile Recorder, 80 (Feb 63) p.49-51. il. ref.

Progress towards automation: advanced spinning system outlined at Helmsore. Textile Weekly, 63 (15 Nov 63) p.964+. il.

Richard Arkwright—inventor and organizer. W. English. Chartered Mechanical Engr., 10 (Nov 63) p.544-8. il. refs.

**YARNS, Cotton, Spinning, Raw materials**

Aspects of cotton growing and production affecting spinning processes. B. H. Crabtree. Textile Manufacturer, 89 (Jul 63) p.277+

**YARNS, Cotton, Spinning, Ring frames**

High speed spinning frame for cotton waste. Textile Recorder, 81 (Jun 63) p.79-80. il.

New high speed ringframe for spinning waste. Textile Manufacturer, 89 (Jun 63) p.227-31. il.

Spinning waste at high speed—Platt's adapt their MR.3 Mk.II ring frame. Textile Weekly, 63 (24 May 63) p.969+. il.

**YARNS, Cotton, Spinning, Ring frames, Fibre drafting**

Fibre drafting at the ring frame. Textile Weekly, 63 (4 Jan 63) p.20-1. il.

**YARNS, Counting**

Tex: international system of yarn counting. H. Mills. Textile Weekly, 63 (19 Apr 63) p.715-16

Tex: international system of yarn counting. H. Mills. Textile Weekly, 63 (3 May 63) p.827-8

**YARNS, Courteille—Cotton**

Processing 'Courteille' on cotton and modified cotton systems. Textile Manufacturer, 89 (Sep 63) p.367-8

**YARNS, Crimping, Machines**

C.S. 9 crimper, Mark II. Hosiery Times, 36 (Apr 63) p.67+. il.

High speed false twist crimping machine. Textile Recorder, 80 (Apr 63) p.93+. il.

Mark II, C.S.9 super-speed crimper. Textile Manufacturer, 89 (Apr 63) p.152-3. il.

Now it's the Mark II C.S.9 crimping machine. Textile Weekly, 63 (8 Mar 63) p.423+. il.

Three aims of crimp unit design. Skinner's Record, 37 (May 63) p.383-4. il.

**YARNS, Drawing, Frames**

High speed cotton-type draw frame. Textile Recorder, 81 (Dec 63) p.67+. il.

Yarn preparation for weaving: rationalization of drawing-in. [Uster automatic] Textile Weekly, 63 (29 Nov 63) p.1055+. il.

**YARNS, Dyeing, Package**

Hacoba F.S. dye package. Hosiery Times, 36 (Feb 63) p.58+. il.

Winding yarn packages for economical dyeing. Textile Manufacturer, 89 (Mar 63) p.110-11. il.

Winding yarns for package dyeing: features of the Hacoba FS cop-built package. Textile Weekly, 63(1) (1 Feb 63) p.194-5. il.

**YARNS, Dyeing, Package, Fluid flow**

Flow patterns in package dyeing. M. J. Denton. J. of Textile Inst. Trans., 54 (Oct 63) p.406-8. il. refs.

**YARNS, Elastic**

Developments in rubber and polyurethane threads. S. E. Lawton. Rubber & Plastics Age, 44 (Jun 63) p.699+. il.

Putting Spandex in perspective: summary of "Recent development in the elastic thread and allied industries" S. E. Lawton. Hosiery Trade J., 70 (Mar 63) p.104-8. il.

Spandex or elastomeric: makers, prices, deniers. Man-Made Textiles, 40 (Jul 63) p.52-3. il.

**YARNS, Fancy, Reproduction, Analysis**

Analysing fancy yarns and procedure for repeating previous orders. N. Primentas. Textile Manufacturer, 89 (Jan 63) p.3-6. il. refs.

**YARNS, Faults**

Yarn and cloth faults. E. J. Poole. Textile Manufacturer, 89 (Jan 63) p.31-2

**YARNS, Filament, Stress—Strain relationships**

Theory of the stress—strain properties of continuous filament yarns. L. R. G. Treloar & G. Riding. J. of Textile Inst., Trans., 54 (Apr 63) p.156-70. refs.

**YARNS, Jute, Drying, Machines, Cylinder**

Cylinder drying machines in the jute industry. D. F. Leach & R. R. Atkinson. Textile Recorder, 80 (Mar 63) p.53+. il.

Cylinder drying machines in the jute industry, pt.2. D. F. Leach & R. R. Atkinson. Textile Recorder, 80 (Apr 63) p.61+. il.

**YARNS, Knitting. See KNITTING, Yarns****YARNS, Linen, Spinning**

Labour and machine utilisation in flax spinning. S. A. G. Caldwell. Textile Manufacturer, 89 (May 63) p.181-3. il.

**YARNS, Man-made fibres, Crimping, Machines**

Converting false-twist spindles. Man-Made Textiles, 40 (Jul 63) p.46-7. il.

Pinlon—compression crimping 400 to 5,000 denier yarns at 2,000 feet per minute. Man-Made Textiles, 40 (Mar 63) p.42-3. il.

**YARNS, Man-made fibres, Drawing, Frames**

High efficiency draw frame [Zinser Textilmaschinen GmbH] Textile Recorder, 81 (May 63) p.73+. il.

**YARNS, Man-made fibres, Manufactures, Cumulative sum charts**

Quality control of synthetic fibre yarns. W. D. Ewan. Textile Inst. & Industry, 1 (Jul 63) p.7-9

**YARNS, Man-made fibres, Spinning**

Modern techniques in spinning cotton and synthetic fibres. I. Jenkins. Textile Manufacturer, 89 (Aug 63) p.320-2

**YARNS, Man-made fibres, Spinning, Rebreaking, Machines**

Mixing and rebreaking developments from Belgium. Skinner's Record, 37 (Mar 63) p.200-1. il.

**YARNS, Man-made fibres, Staple, Fusiform**

Possibilities with modified man-made staples. A. Johnson. Textile Manufacturer, 89 (Oct 63) p.422-4. il. refs.

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- ZINC-TIN**, Coatings. See COATINGS, Tin-Zinc
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Zincite (Mineral specimen, no.121) *Mine & Quarry Engng.*, 29 (Oct 63) p.430-1. il.
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Dissolution rates, electrochemical and passivation properties of alpha Zr-O solid solutions in HF. W. J. James, W. G. Custead & M. E. Straumais. *Corrosion Science*, 2 (Oct 62) p.237-54. il. refs.
- ZIRCONIUM**, Determination of boron, Spectrophotometry  
Determination of boron in zirconium, hafnium and titanium. W. T. Ellwell & D. F. Wood. *Analyst*, 88 (Jun 63) p.475-6. refs.  
Determination of traces of boron in zirconium and zirconium alloys. M. R. Hayes & J. Metcalfe. *Analyst*, 88 (Jun 63) p.471-4. refs.
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New proton-containing oxides of titanium, zirconium and hafnium. F. K. McTaggart. *Nature*, 199 (27 Jul 63) p.339-41. il. refs.
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High-temperature ion exchange properties of zirconium phosphate. J. R. Grover & B. E. Chidley. *Industrial Chemist*, 39 (Jan 63) p.31-7. il. refs.
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Zone melting and column crystallization. J. E. Powers.  
Industrial Chemist, 39 (Oct 63) p.541-4. il. refs.

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(Q) Quarterly

(4M) 4 monthly

(2Y) 2 issues per year

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